Analytical Data Package Prepared For

Pacific Northwest National Lab

Radiochemical Analysis By

STL Richland STLRL

2800 G.W. Way, Richland Wa, 99354, (509)-375-3131.

Data Package Contains _____ Pages

Report Nbr: 34298

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	BATCH
W05076	I07-010	B1L294	J6L080147-1	JK3V31AA	9JK3V310	6353627
		B1L294	J6L080147-1	JK3V31AC	9JK3V310	6353633
		B1L294	J6L080147-1	JK3V31AD	9JK3V310	6353623
		B1L2C3	J6L080147-2	JK3W81AA	9JK3W810	6353627
		B1L2C3	J6L080147-2	JK3W81AC	9JK3W810	6353633
		B1L2C3	J6L080147-2	JK3W81AD	9JK3W810	6353623
		B1L299	J6L080147-3	JK3XF1AA	9JK3XF10	6353627
		B1L299	J6L080147-3	JK3XF1AC	9JK3XF10	6353633
		B1L299	J6L080147-3	JK3XF1AD	9JK3XF10	6353623
		B1L289	J6L080147-4	JK3XT1AA	9JK3XT10	6353627
at.		B1L289	J6L080147-4	JK3XT1AC	9JK3XT10	6353633
		B1L289	J6L080147-4	JK3XT1AD	9JK3XT10	6353623
	107-009	B1L216	J6L110136-1	JK70P1AA	9JK70P10	6353627
		B1L216	J6L110136-1	JK70P1AC	9JK70P10	6353623
	W07-011	B1L650	J6L110147-1	JK72X1AA	9JK72X10	6353636

Comments:

Report Nbr: 34298

SDG Nbr	ORDER Nbr	CLIENT ID NUMBER	LOT Nbr	WORK ORDER	RPT DB ID	ВАТСН
W05076	W07-011	B1L650	J6L110147-1	JK72X1AC	9JK72X10	6353638
		B1L650	J6L110147-1	JK72X1AD	9JK72X10	6353637
		B1L650	J6L110147-1	JK72X1AE	9JK72X10	6353623
		B1L600	J6L110147-2	JK73K1AA	9JK73K10	6353636
		B1L600	J6L110147-2	JK73K1AC	9JK73K10	6353623
	107-011	B1L2R2	J6L110151-1	JK7341AA	9JK73410	6353628
		B1L2X2	J6L110151-2	JK7361AA	9JK73610	6353628
		B1L2X1	J6L110151-3	JK7391AA	9JK73910	6353628
	S07-011	B1L3D3	J6L110154-1	JK75E1AA	9JK75E10	6353633
	S07-012	B1LCV5	J6L110155-1	JK7521AA	9JK75210	6353631
		B1LCM9	J6L110156-1	JK76K1AA	9JK76K10	6353628
		B1LCN4	J6L110156-2	JK76P1AA	9JK76P10	6353628
		B1LCP4	J6L110156-3	JK76T1AA	9JK76T10	6353628
		B1LCN9	J6L110156-4	JK76X1AA	9JK76X10	6353631
		B1LCN9	J6L110156-4	JK76X1AC	9JK76X10	6353628
		B1LCK0	J6L130175-1	JLDGA1AA	9JLDGA10	6353636
		B1LCK0	J6L130175-1	JLDGA1AC	9JLDGA10	6353631
		B1LCK0	J6L130175-1	JLDGA1AD	9JLDGA10	6353628
		B1LCM0	J6L130175-2	JLDGF1AA	9JLDGF10	6353633
		B1LCM0	J6L130175-2	JLDGF1AC	9JLDGF10	6353631
		B1LCM0	J6L130175-2	JLDGF1AD	9JLDGF10	6353628
		B1LCL9	J6L130175-3	JLDGJ1AA	9JLDGJ10	6353633
		B1LCL9	J6L130175-3	JLDGJ1AC	9JLDGJ10	6353631
		B1LCL9	J6L130175-3	JLDGJ1AD	9JLDGJ10	6353628
		B1LCL0	J6L130175-4	JLDG41AA	9JLDG410	6353628



STL Richland 2800 George Washington Way Richland, WA 99354

Tel: 509 375 3131 Fax: 509 375 5590 www.stl-inc.com

Certificate of Analysis

Pacific Northwest National Laboratories Sigma V Building Richland, WA 99352

January 24, 2007

Attention: Dot Stewart

SAF Number : I07-010, I07-009, W07-011, S07-011, S07-012

Date SDG Closed : December 11, 2006

Number of Samples : Twenty (20)

Sample Type : Water SDG Number : W05076

Data Deliverable : 45-Day / Summary

CASE NARRATIVE

I. Introduction

Between December 5, 2006 and December 11, 2006, twenty water samples were received at STL Richland (STLR) for radiochemical analysis. Upon receipt, the samples were assigned the following laboratory ID numbers to correspond with the Pacific Northwest National Laboratories (PGW) specific IDs:

PGW ID#	STLR ID#	DATE OF RECEIPT	MATRIX
B1L289	JK3XT	12/5/06	WATER
B1L299	JK3XF	12/5/06	WATER
B1L2C3	JK3W8	12/5/06	WATER
B1L294	JK3V3	12/5/06	WATER
B1L216	JK70P	12/6/06	WATER
B1L600	JK73K	12/6/06	WATER
B1L650	JK72X	12/6/06	WATER
B1L2X1	JK739	12/7/06	WATER
B1L2X2	JK736	12/7/06	WATER
B1L2R2	JK734	12/7/06	WATER
B1L3D3	JK75E	12/7/06	WATER
B1LCV5	JK752	12/8/06	WATER
B1LCN9	JK76X	12/8/06	WATER

B1LCP4	JK76T	12/8/06	WATER	
B1LCN4	JK76P	12/8/06	WATER	
B1LCM9	JK76K	12/8/06	WATER	
B1LCL0	JLDG4	12/11/06	WATER	
B1LCL9	JLDGJ	12/11/06	WATER	
B1LCM0	JLDGF	12/11/06	WATER	
B1LCK0	JLDGA	12/11/06	WATER	

II. Sample Receipt

Sample B1L650, COC W07-011-432, has a sample date of 12/5/06 however the COC was signed 12/06/06. The client was notified on 12/3/06 via email. The other samples in this SDG were received in good condition and no anomalies were noted during check-in.

III. Analytical Results/Methodology

The analytical results for this report are presented by laboratory sample ID. Each set of data includes sample identification information, analytical results and the appropriate associated statistical errors.

The requested analyses were:

Alpha Spectroscopy

Uranium 234, 235 and 238 by method RICH-RC-5039

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014 Gross Beta by method RICH-RC-5014 Strontium-90 by method RICH-RC-5006

Gamma Spectroscopy

Iodine-129 (LL) by method RICH-RC-5025

Liquid Scintillation Counting

Technetium-99 by TEVA method RICH-RC-5065

Tritium by method RICH-RC-5007

Laser Induced Phosphorimetry

Total Uranium by method RICH-RC-5058

IV. Quality Control

The analytical results for each analysis performed includes a minimum of one laboratory control sample (LCS), one method (reagent) blank, and one duplicate sample analysis. Any exceptions have been noted in the "Comments" section.

QC and sample results are reported in the same units.

V. Comments

Alpha Spectroscopy

Uranium 234, 235 and 238 by method RICH-RC-5039

The LCS, batch blank, samples and sample duplicate (B1LCK0) results are within contractual requirements.

Gas Proportional Counting

Gross Alpha by method RICH-RC-5014:

The LCS, batch blank, samples and sample duplicate (B1L650) results are within contractual requirements.

Gross Beta by method RICH-RC-5014:

The LCS, batch blank, samples and sample duplicate (B1L650) results are within contractual requirements.

Strontium-90 by method RICH-RC-5006

The tech notes in the comment section that sample B1L299 may have slightly contaminated sample B1L3D3. The results show sample B1L299 is negative and B1L3D3 has a duplicate that agrees with it very well. Data will be accepted. Except as noted, the LCS, batch blank, samples and sample duplicate (B1L3D3) results are within contractual requirements.

Gamma Spectroscopy

Iodine-129 (LL) by method RICH-RC-5025:

The LCS, batch blank, samples and sample duplicate (B1L216) results are within contractual requirements.

Liquid Scintillation Counting

Technetium-99 by TEVA method RICH-RC-5065:

The LCS, batch blank, samples, sample duplicate (B1L294), and sample matrix spike (B1L2C3) results are within contractual requirements.

Tritium by method RICH-RC-5007:

The LCS, batch blank, samples and sample duplicate (B1L650) results are within contractual requirements.

Total Uranium

Total Uranium by method RICH-RC-5058:

Sample B1L2R2 showed some matrix effect during counting and gave low results. It was recounted at a 1:10 dilution with good results. The tech forgot to count a blank at the end of the calibration on Jan. 22, 2007. A blank was counted at the end of the batch and was within limits. Data is accepted. Except as noted, the LCS, batch blank, samples, sample duplicate (B1LCP4), and sample matrix spike (B1LCN9) results are within contractual requirements.

Pacific Northwest National Laboratories January 24, 2007

I certify that this Certificate of Analysis is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the Laboratory Manager, or a designee as verified by the following signature.

Reviewed and approved:

Sherryl A Adam Project Manager

Drinking Water Method Cross References

	DRINKING WATER	R ASTM METHOD CROSS REFERENCES
Referenced Method	Isotope(s)	STL Richland's SOP number
EPA 901.1	Cs-134, I-131	RICH-RC-5017
EPA 900.0	Alpha & Beta	RICH-RC-5014
EPA 903.1	Ra-226	RICH-RC-5005
EPA 904.0	Ra-228	RICH-RC-5005
EPA 905.0	Sr89/90	RICH-RC-5006
ASTM D2460	Total Radium	RICH-RC-5027
Standard Method 7500-U-C & ASTM D5174	Uranium	RICH-RC-5058
EPA 906.0	Tritium	RICH-RC-5007
NOTE:		
The Gross Alpha LCS is prepared with Am-24		
The Gross Beta LCS is prepared with Sr/Y-90	(unless otherwise	specified in the case narrative)

Uncertainty Estimation

STL Richland has adopted the internationally accepted approach to estimating uncertainties described in "NIST Technical Note 1297, 1994 Edition". The approach, "Law of Propagation of Errors", involves the identification of all variables in an analytical method which are used to derive a result. These variables are related to the analytical result (R) by some functional relationship, R = constants * f(x,y,z,...). The components (x,y,z) are evaluated to determine their contribution to the overall method uncertainty. The individual component uncertainties (u_i) are then combined using a statistical model that provides the most probable overall uncertainty value. All component uncertainties are categorized as type A, evaluated by statistical methods, or type B, evaluated by other means. Uncertainties not included in the components, such as sample homogeneity, are combined with the component uncertainty as the square root of the sum-of-the-squares of the individual uncertainties. The uncertainty associated with the derived result is the combined uncertainty (u_c) multiplied by the coverage factor (1,2, or 3).

When three or more sample replicates are used to derive the analytical result, the type A uncertainty is the standard deviation of the mean value (S/vn), where S is the standard deviation of the derived results. The type B uncertainties are all other random or non-random components that are not included in the standard deviation.

The derivation of the general "Law of Propagation of Errors" equations and specific example are available on request.

	Report Definitions
Action Lev	An agreed upon activity level used to trigger some action when the final result is greater than or equal to the Action Level. Often the Action Level is related to the Decision Limit.
Batch	The QC preparation batch number that relates laboratory samples to QC samples that were prepared and analyzed together.
Bias	Defined by the equation (Result/Expected)-1 as defined by ANSI N13.30.
COC No	Chain of Custody Number assigned by the Client or STL Richland.
Count Error (#s)	Poisson counting statistics of the gross sample count and background. The uncertainty is absolute and in the same units as the result. For Liquid Scintillation Counting (LSC) the batch blank count is the background.
Total Uncert (#s) u_{c} - Combined Uncertainty.	All known uncertainties associated with the preparation and analysis of the sample are propagated to give a measure of the uncertainty associated with the result, u_c the combined uncertainty. The uncertainty is absolute and in the same units as the result.
(#s), Coverage	The coverage factor defines the width of the confidence interval, 1, 2 or 3 standard deviations.
Factor CRDL (RL)	Contractual Required Detection Limit as defined in the Client's Statement Of Work or STL Richland "default" nominal detection limit. Often referred to the reporting level (RL)
Lc	Decision Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume associated with the sample. The Type I error probability is approximately 5%. Lc=(1.645 * Sqrt(2*(BkgrndCnt/BkgrndCntMin)/SCntMin)) * (ConvFct/(Eff*Yld*Abn*Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability. Lc cannot be calculated when the background count is zero.
Lot-Sample No	The number assigned by the LIMS software to track samples received on the same day for a given client. The sample number is a sequential number assigned to each sample in the Lot.
MDC MDA	Detection Level based on instrument background or blank, adjusted by the Efficiency, Chemical Yield, and Volume with a Type I and II error probability of approximately 5%. MDC = (4.65 * Sqrt((BkgrndCnt/BkgrndCntMin)/SCntMin) + 2.71/SCntMin) * (ConvFct/(Eff * Yld * Abn * Vol) * IngrFct). For LSC methods the batch blank is used as a measure of the background variability.
Primary Detector	The instrument identifier associated with the analysis of the sample aliquot.
Ratio U-234/U-238	The U-234 result divided by the U-238 result. The U-234/U-238 ratio for natural uranium in NIST SRM 4321C is 1.038.
Rst/MDC	Ratio of the Result to the MDC. A value greater than 1 may indicate activity above background at a high level of confidence. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Rst/TotUcert	Ratio of the Result to the Total Uncertainty. If the uncertainty has a coverage factor of 2 a value greater than 1 may indicate activity above background at approximately the 95% level of confidence assuming a two-sided confidence interval. Caution should be used when applying this factor and it should be used in concert with the qualifiers associated with the result.
Report DB No	Sample Identifier used by the report system. The number is based upon the first five digits of the Work Order Number.
RER	The equation Replicate Error Ratio = $(S-D)/[sqrt(TPUs^2 + TPUd^2)]$ as defined by ICPT BOA where S is the original sample result, D is the result of the duplicate, TPUs is the total uncertainty of the original sample and TPUd is the total uncertainty of the duplicate sample.
SDG	Sample Delivery Group Number assigned by the Client or assigned by STL Richland upon sample receipt.
Sum Rpt Alpha Spec Rst(s)	The sum of the reported alpha spec results for tests derived from the same sample excluding duplicate result where the results are in the same units.
Work Order	The LIMS software assign test specific identifier.
Yield	The recovery of the tracer added to the sample such as Pu-242 used to trace a Pu-239/40 method.
1	

pCi/L

9.53E+02

1.7E+01

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd. h:\Reportdb\edd\FeadIV\Rad\34298.Edd FormNbr: R FormatType: FEAD Version: 05 Rot Nbr: 34298 Lab Client Test Contract SAF Nbr Sdq QC Moisture/ Distilled Sample Collection Nbr: On Date: Sample Id: ld: User Nbr Type: Solids%*: Volume Date: 9JK3V310 B1L294 MW6-SBB-A1 I07-010 W05076 12/05/2006 10:28 CAS# Unit CntU 2S TotU 2S Qual MDA TrcYield Method Ala Size Analy Date/Time Act Batch Analyte Result Unit 1.3E-01 U 2.30E-01 97.3 1129LL SEP LEPS 3.8724E+00 01/23/2007 16:24 6353627 I-129L 15046-84-1 -2.85E-02 nCi/L 1.3E-01 4.88E-01 80.8 SRISO SEP PRE 1.0044E+00 SR-90 pCi/L 2.5E-01 2.5E-01 U 01/19/2007 07:00 6353633 10098-97-2 2.85E-01 TC99 ETVDSK LS 1.263E-01 01/13/2007 09:57 6353623 Tc-99 14133-76-7 1.41E+02 pCi/L 7.6E+00 1.4E+01 9.81E+00 100.0 Lab Client Test Contract SAF Nbr Sdg OC Moisture/ Distilled Sample Collection On Date: Nbr: Solids%*: Volume Date: Sample Id: ld: User Nbr Type: 12/05/2006 08:54 9JK3W810 B1L2C3 MW6-SBB-A1 107-010 W05076 MDA TrcYield Method CAS# CntU 2S TotU 2S Qual Alq Size Analy Date/Time Act Batch Analyte Result Unit Unit 1.5E-01 6353627 I-129L 15046-84-1 1.71E-02 pCi/L 1.5E-01 U 2.74E-01 95.9 1129LL SEP LEPS 3.8986E+00 L 01/23/2007 16:25 SR-90 -1.02E-01 pCi/L 2.0F-01 2.2E-01 U 5.07E-01 85.5 SRISO SEP PRE 1.0005E+00 01/19/2007 07:00 6353633 10098-97-2 TC99 ETVDSK LS 1.275E-01 pCi/L 5.7E+00 8.9E+00 9.77E+00 100.0 01/13/2007 09:57 6353623 Tc-99 14133-76-7 5.51E+01 Lab Client Test Contract SAF Nbr Sdg QC Moisture/ Distilled Sample Collection ld: User Nbr Nbr: Type: Solids%*: Volume On Date: Date: Sample Id: 12/05/2006 11:02 B1L299 W05076 9JK3XF10 MW6-SBB-A1 107-010 MDA TrcYield Method CAS# CntU 2S TotU 2S Qual Ala Size Analy Date/Time Act Batch Analyte Result Unit Unit 2 69F-01 91.4 1129LL SEP LEPS 3.8695E+00 6353627 I-129L 15046-84-1 3.98E-02 pCi/L 1.4E-01 1.4E-01 U 01/23/2007 16:25 SR-90 10098-97-2 -2.36E-01 pCi/L 2.0E-01 2.1E-01 U 5.05E-01 82.2 SRISO SEP PRE 1.0058E+00 01/19/2007 07:00 6353633 pCi/L 6.5E+00 1.1E+01 9.89E+00 100.0 TC99 ETVDSK LS 1.25E-01 01/13/2007 07:36 6353623 Tc-99 14133-76-7 8.62E+01 Lab Client Test Contract SAF Nbr Sdg QC Moisture/ Distilled Sample Collection Solids%*: Volume On Date: Date: Nbr: Type: Sample Id: ld: User Nbr 12/05/2006 09:19 W05076 9JK3XT10 B1L289 MW6-SBB-A1 107-010 **TrcYield** Act CAS# CntU 2S TotU 2S Qual MDA Method Alg Size Unit Analy Date/Time Batch **Analyte** Result Unit pCi/L 1.3E-01 1.3E-01 U 2.37E-01 96.2 1129LL SEP LEPS 3.8811E+00 01/23/2007 18:09 6353627 I-129L 15046-84-1 -5.47E-02 SR-90 pCi/L 2.2E-01 2.2E-01 U 5.12E-01 83.4 SRISO SEP PRE 1.0017E+00 L 01/19/2007 07:00 6353633 10098-97-2 -1.05E-01 9.95E+00 100.0 TC99 ETVDSK LS 1.245E-01 01/13/2007 08:39 6353623 TC-99 14133-76-7 3.58E+01 pCi/L 5.2E+00 7.9E+00 Distilled Collection Lab Client Test Contract SAF Nbr Sdg QC Moisture/ Sample Nbr: Solids%*: Volume On Date: Date: Sample Id: ld: User Nbr Type: 12/06/2006 13:13 MW6-SBB-A1 107-009 W05076 9JK70P10 B1L216 Alg Size Analy Date/Time Act CAS# Unit CntU 2S TotU 2S Qual MDA TrcYield Method Unit Result Batch Analyte 1129LL SEP LEPS 3.9187E+00 2.7E-01 4.31E-01 95.9 01/23/2007 18:10 6353627 I-129L 15046-84-1 8.46E-01 pCi/L 2.7E-01 U

6353623

9.78E+00 100.0

TC99 ETVDSK LS 1.263E-01

6.3E+01

01/13/2007 09:41

Lab Code: STI BL

14133-76-7

TC-99

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/24	/2007	8.41	.38	AN

STL Richland Report

Lab Code: STLRL

FormNbr	: R	FormatType: F	EAD Vers i	ion: 05	Rpt N	br: 34298		File Name:	:\Reportdb\e	edd\FeadIV\Rad\W050	76.Edd, h:∖Rej	oortdb\edd	d\FeadIV\Rad\34298.E	∃dd
Lab Sample Id: 9JK72X10	Client Id: B1L650	Test User	Contract Nbr MW6-SBB-A1	SAF Nb W07-011	Nbr:	QC Type	:	Moisture/ Solids%*:	Distilled Volume	Sample On Date:		D	ection Pate: 006 11:50	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA .	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Ac
6353636	H-3	10028-17-8	1.07E+03	pCi/L	1.6E+02	1.8E+02		2.96E+02	100.0	906.0_H3_LSC	5.00E-03	L	01/07/2007 03:15	5 I
6353638	ALPHA	12587-46-1	5.33E-01	pCi/L	9.5E-01	9.5E-01	U	2.03E+00	100.0	9310_ALPHABETA	1.671E-01	L	01/16/2007 17:05	ا دَ
6353637	BETA	12587-47-2	6.96E+01	pCi/L	4.3E+00	1.0E+01		2.99E+00	100.0	9310_ALPHABETA	1.822E-01	L	01/16/2007 13:29)
6353623	TC-99	14133-76-7	2.63E+02	pCi/L	9.6E+00	2.1E+01		9.80E+00	100.0	TC99_ETVDSK_LS	1.264E-01	L	01/13/2007 10:44	1 1
Lab Sample Id: 9JK73410	Client Id: B1L2R2	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05076	QC Type		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			ection Date: 006 09:14	
Batch 6353628	Analyte Uranium	CAS# 7440-61-1	Result 3.59E+00	Unit ug/L	CntU 2S 3.7E-01	TotU 2S 3.7E-01	Qual	MDA 7.62E-02	TrcYield	Method UTOT_KPA	Alq Size 2.75E-02	Unit ML	Analy Date/Time 01/22/2007 16:39	Act
Lab Sample Id: 9JK73610	Client Id: B1L2X2	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05076	QC Type	:	Moisture/ Solids%*:	Distilled Volume	•		Collection		
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353628	Uranium	7440-61-1	1.20E+00	ug/L	1.2E-01	1.2E-01		8.35E-02		UTOT_KPA	2.51E-02	ML	01/19/2007 11:33	3 I
Lab Sample Id: 9JK73910	Client Id: B1L2X1	Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05076	QC Type):	Moisture/ Solids%*:	Distilled Volume	•		E	lection Date: 2006 10:38	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353628	Uranium	7440-61-1	1.19E+00	ug/L	1.2E-01	1.2E-01		7.57E-02		UTOT_KPA	2.77E-02	ML	01/19/2007 11:40	I C
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF N	Nbr:	QC Type):	Moisture/ Solids%*:	Distilled Volume				lection Date:	
9JK73K10	B1L600		MW6-SBB-A1	W07-011	W05076								2006 12:45	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353636	H-3	10028-17-8	2.09E+04	pCi/L	4.8E+02			2.97E+02		906.0_H3_LSC	5.00E-03	L	01/07/2007 05:59	
6353623	TC-99	14133-76-7	4.00E+02	pCi/L	1.1E+01	2.9E+01		9.64E+00	100.0	TC99_ETVDSK_LS	1.282E-01	L	01/13/2007 11:46	6 1
Lab Sample Id: 9JK75210	Client Id: B1LCV5	Test User	Contract Nbr MW6-SBB-A1	SAF Nt	Nbr:	, ,		Moisture/ Solids%*:	Distilled Volume	•		[lection Date: 2006 10:18	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	I MDA	TrcYield	Method	Alg Size	Unit	Analy Date/Time	Act
	Analyte												•	
6353631	U-234	13966-29-5	1.76E+01	pCi/L	1.4E+00	3.2E+00		1.32E-01	103.1	UISO_PLATE_AEA	1.993E-01	L	01/12/2007 21:18	8 I

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/24/200	7 8:41:38 AM	!			\mathbf{S}	TL Ricl	nlan	d Repor	rt			L	ab Code: STLRL	
FormNbi	r: R	FormatType:	FEAD Vers	ion: 05	Rpt N	br: 34298		File Name:	h:\Reportdb\e	edd\FeadIV\Rad\W050	76.Edd, h:\Rep	oortdb\edd	d\FeadIV\Rad\34298.E	Edd
6353631	U-238	U-238	1.59E+01	pCi/L	1.3E+00	2.9E+00		1.32E-01	103.1	UISO_PLATE_AEA	1.993E-01	L	01/12/2007 21:18	3 1
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	r Sdg Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			ection late:	
9JK75E10	B1L3D3		MW6-SBB-A1	S07-011	W05076	3						12/07/2	006 11:41	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353633	SR-90	10098-97-2	2.15E+00	pCi/L	3.6E-01	4.8E-01		4.35E-01	76.0	SRISO_SEP_PRE	9.966E-01	L	01/19/2007 07:00)
Lab Sample Id:		Test User	Contract Nbr	SAF Nb	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		D	ection Pate:	
9JK76K10	B1LCM9		MW6-SBB-A1	S07-012	W05076							12/08/2	006 13:23	
Batch 6353628	Analyte Uranium	CAS# 7440-61-1	Result -7.56E-03	Unit ug/L	CntU 2S 1.1E-03	TotU 2S 1.1E-03	Qual U	M DA 8.00E-02	TrcYield	Method UTOT_KPA	Alq Size 2.62E-02	Unit ML	Analy Date/Time 01/19/2007 11:42	Act
											2.021 02			- '
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	r Sdg Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume	Sample On Date:			ection Pate:	
9JK76P10	B1LCN4	0301	MW6-SBB-A1	S07-012	W05076		·.	Jonas 70 .	Volumo	On Bute.			006 12:11	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qual	I MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353628	Uranium	7440-61-1	-1.02E-02	ug/L	1.7E-03	1.7E-03	U	8.15E-02	2	UTOT_KPA	2.57E-02	ML	01/19/2007 11:47	7
Lab Sample Id:		Test User	Contract Nbr	SAF Nb	Nbr:	Nbr: Type:		Moisture/ Solids%*:	Distilled Volume	Sample On Date:		Collection Date: 12/08/2006 09:45		
9JK76T10	B1LCP4		MW6-SBB-A1		W05076									
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qual		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353628	Uranium	7440-61-1	2.46E-02	ug/L	2.7E-03	2.7E-03	U	8.25E-02		UTOT_KPA	2.54E-02	ML	01/19/2007 11:51	
Lab Sample Id:	Client ld:	Test User	Contract Nbr	SAF Nb	Nbr:			Moisture/ Solids%*:	Distilled Volume	Sample On Date:		C	ection Date:	
9JK76X10	B1LCN9		MW6-SBB-A1	S07-012	W05076	6						12/08/2	006 10:51	
Batch	Analyte	CAS#	Result		CntU 2S	TotU 2S	Qua		TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353631	U-234	13966-29-5	2.49E+01	pCi/L	1.7E+00	4.5E+00		1.45E-01		UISO_PLATE_AEA		L	01/12/2007 21:19	
6353631	U-235	15117-96-1	9.32E-01	pCi/L	3.4E-01	3.7E-01		1.45E-01	1 98.1	UISO_PLATE_AEA	2.062E-01	<u> </u>	01/12/2007 21:19	9
6353631	U-238	U-238	2.21E+01	pCi/L	1.6E+00	4.0E+00		1.45E-01	1 98.1	UISO_PLATE_AEA	2.062E-01	L	01/12/2007 21:19	9 [
6353628	Uranium	7440-61-1	6.10E+01	ug/L	7.2E+00	7.2E+00		8.06E-02	2	UTOT_KPA	2.60E-02	ML	01/19/2007 12:09	9
Lab Sample Id: 9JLDG410		Test User	Contract Nbr MW6-SBB-A1	SAF N b	or Sdg Nbr: W05070			Moisture/ Solids%*:	Distilled Volume	•			lection Date: 2006 12:19	
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	i MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Time	Act
6353628	Uranium	7440-61-1	1.07E+02	ug/L	1.3E+01	1.3E+01		8.32E-02		UTOT_KPA	2.52E-02		01/19/2007 12:24	

STL Richland

rptFeadRadSummaryEdd v3.48

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

1/24/200	7 8:41:38 AM	1			SI	L Ricl	ılaı	nd Repo	ort			L	ab Code: STLF	₹L	
FormNbi	r: R	FormatType: F	FEAD Vers	ion: 05	Rpt N	br: 34298		File Name:	h:\Reportdb\	\edd\FeadIV\Rad\W050	076.Edd, h:\Rep	ortdb\edd	d\FeadIV\Rad\34	4298.E	dd
Lab Sample Id: 9JLDGA10	Client Id: B1LCK0	Test User	Contract Nbr MW6-SBB-A1	SAF Nb S07-012	or Sdg Nbr: W05076	QC Type		Moisture/ Solids%*:	Distilled Volume			D	ection Pate: 006 13:54		
Batch	Analyte	CAS#	Result	Unit		TotU 2S	Qua	al MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Ti	me	Act
6353636	H-3	10028-17-8	5.78E+03	pCi/L	2.7E+02	3.7E+02		2.97E+0	2 100.0	906.0_H3_LSC	5.00E-03	L	01/07/2007	07:20	I
6353631	U-234	13966-29-5	3.62E+01	pCi/L	2.1E+00	6.3E+00		2.02E-0	1 95.5	UISO_PLATE_AEA	2.008E-01	L	01/12/2007	21:19	1
6353631	U-235	15117-96-1	1.54E+00	pCi/L	4.4E-01	5.1E-01		1.27E-0	1 95.5	UISO_PLATE_AEA	2.008E-01	L	01/12/2007	21:19	1
6353631	U-238	U-238	3.41E+01	pCi/L	2.1E+00	6.0E+00		1.27E-0	1 95.5	UISO_PLATE_AEA	2.008E-01	L	01/12/2007	21:19	- 1
6353628	Uranium	7440-61-1	1.01E+02	ug/L	1.2E+01	1.2E+01		7.68E-0	2	UTOT_KPA	2.73E-02	ML	01/19/2007	12:18	I
Lab Sample Id:	Client Id:	Test User	Contract Nbr	SAF Nb	or Sdg Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume				ection Pate:		
9JLDGF10	B1LCM0		MW6-SBB-A1	S07-012	W05076	;						12/11/2	006 07:50		
Batch	Analyte	CAS#	Result	Unit	CntU 2S	TotU 2S	Qua	ai MDA	TrcYield	Method	Alq Size	Unit	Analy Date/Ti	ime	Act
6353633	SR-90	10098-97-2	-1.56E-01	pCi/L	2.1E-01	2.1E-01	U	5.19E-0	1 66.8	SRISO_SEP_PRE	1.0012E+00	L	01/19/2007	07:00	1
6353631	U-234	13966-29-5	3.58E-02	pCi/L	1.1E-01	1.1E-01	U	2.82E-0	1 83.3	UISO_PLATE_AEA	2.005E-01	L	01/12/2007	21:20	1
6353631	U-235	15117-96-1	-4.22E-03	pCi/L	1.1E-01	1.1E-01	U	2.12E-0	1 83.3	UISO_PLATE_AEA	2.005E-01	L	01/12/2007	21:20	I
6353631	U-238	U-238	0.00E+00	pCi/L	1.1E-01	1.1E-01	U	2.12E-0	1 83.3	UISO_PLATE_AEA	2.005E-01	L	01/12/2007	21:20	I
6353628	Uranium	7440-61-1	1.18E-02	ug/L	1.3E-03	1.3E-03	U	8.22E-0	2	UTOT_KPA	2.55E-02	ML	01/19/2007	12:20	I
Lab Sample Id:		Test User	Contract Nbr	SAF Nb	Nbr:	QC Typ		Moisture/ Solids%*:	Distilled Volume			E	lection Date:		
9JLDGJ10	B1LCL9		MW6-SBB-A1	S07-012	W05076	6						12/11/2	2006 10:27		
Batch	Analyte	CAS#	Result			TotU 2S	Qua		TrcYield	Method	Alq Size	Unit	Analy Date/Ti		Act
6353633	SR-90	10098-97-2	2.63E+00	pCi/L	3.6E-01	5.2E-01		3.97E-0	1 83.6	SRISO_SEP_PRE		L	01/19/2007		
6353631	U-234	13966-29-5	1.37E+01	pCi/L	1.5E+00	2.8E+00		2.74E-0	1 95.4	UISO_PLATE_AEA	2.031E-01	· L	01/12/2007	21:21	1
6353631	U-235	15117-96-1	5.03E-01	pCi/L	3.0E-01	3.1E-01		2.45E-0	1 95.4	UISO_PLATE_AEA	2.031E-01	L	01/12/2007	21:21	1
6353631	U-238	U-238	1.25E+01	pCi/L	1.5E+00	2.6E+00		2.08E-0	1 95.4	UISO_PLATE_AEA	2.031E-01	L	01/12/2007	21:21	I
6353628	Uranium	7440-61-1	3.81E+01	ug/L	4.5E+00	4.5E+00		8.35E-0	2	UTOT_KPA	2.51E-02	ML	01/19/2007	12:22	. 1

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH11AB

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/07/2006 11:41

Client Id:

NA

Matrix:

Qu-

WATER

WATER

Sample On Date:

12/07/2006

Moisture/Solids%*:

QC Type:

BLK

Received Date:

SAF Nbr

Contract Nbr MW6-SBB-A19981 Test User

Case Nbr

SAS Nbr

Tracer

Suffix Decant **Distilled Volume**

File Id

FSuffix RTyp BE

Batch # /

Qc Type

BLK

Analyt/ CAS#

Result/ Orig Rst -2.65E-01

Tot/Cnt Unit pCi/L 1.9E-01

Uncert 2S

MDC Yield 68.4

Spk Conc/ %Rec

Analy Method Aliq Size/

Date/Time Analyzed

RPD/ RER/ UCL UCL

LCS

Н

6353633 SR-90

10098-97-2

1.8E-01

al 4.99E-01

1.0025E+00 01/19/2007 SRISO SEP P

07:00

LCL/UCL Typ D

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\\34298.Edd

Lab Sample Id:

JLTH41AB

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

RER/

UCL

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Received Date: 12/06/2006

Moisture/Solids%*:

QC Type:

Case Nbr

Qu-

al

BLK

Н

SAF Nbr

6353636 H-3

Batch # /

Qc Type

Contract Nbr MW6-SBB-A19981 Test User

SAS Nbr

Tracer

Suffix Decant **Distilled Volume**

File Id

FSuffix RTyp BG

Analyt/ CAS#

Result/ Orig Rst 2.96E+00

Tot/Cnt Uncert 2S pCi/L 1.4E+02

MDC Yield 2.97E+02 100.0

Spk Conc/ %Rec

Analy Aliq Method 906.0_H3_LSC 5.00E-03

Size/ Analyzed 01/06/2007

Date/Time RPD/ UCL

LCS LCL/UCL Typ D

10028-17-8 BLK

1.2E+02

L 21:49

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH41DX

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

SAF Nbr

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: **BLK**

Received Date: 12/06/2006

Contract Nbr **Test User** MW6-SBB-A19981

Case Nbr SAS Nbr

Suffix Decant **Distilled Volume**

File Id FSuffix RTyp

Batch # /

Qc Type

Analyt/ CAS# 6353636 H-3

Result/ Orig Rst 1.12E+02

Tot/Cnt Unit Uncert 2S pCi/L 1.4E+02

Qu-

al

Tracer MDC Yield 3.03E+02 100.0

Spk Conc/ %Rec

Analy Method

Aliq Size/

Analyzed 01/07/2007

Date/Time

RPD/ UCL RER/ LCS UCL LCL/UCL Typ

10028-17-8 BLK

1.3E+02

L

00:32

D

ВΙ

Н

R

STL Richland QC Blank Report Wednesday, January 24, 2007 FormNbr: R VersionNbr: 05

Lab Code: STLRL

Moisture/Solids%*:

FormatType: FEAD

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH51AB

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

NA

Matrix:

QC Type:

WATER BLK

WATER

Sample On Date:

Received Date: 12/06/2006

SAF Nbr

Contract Nbr MW6-SBB-A19981 Test User Case Nbr SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp BK

Н

Batch # / Qc Type 6353637

Analyt/ CAS# BETA

Result/ Orig Rst 9.77E-01

Tot/Cnt Uncert 2S Unit pCi/L 1.2E+00 1.2E+00

Qual

Tracer MDC Yield 2.48E+00 100.0

Spk Conc/ %Rec

Analy Method 9310 ALPHAB

Aliq Size/ 1.997E-01

Date/Time Analyzed 01/16/2007 RPD/ RER/ UCL UCL

LCS LCL/UCL Typ

D

13:29

BLK 12587-47-2

L

STL Richland

U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide. J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Blank Report Lab Code: STLRL Wednesday, January 24, 2007 FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd Sdg/Rept Nbr: W05076 JLTH71AB 34298 Lab Sample Id: Collection Date: 12/05/2006 11:50 WATER WATER Client Id: NA Matrix: Sample On Date: Moisture/Solids%*: QC Type: **BLK Received Date:** 12/06/2006 SAS Nbr Suffix Contract Nbr **Test User** Case Nbr Decant **Distilled Volume** File Id FSuffix RTyp SAF Nbr MW6-SBB-A19981 ВМ Н Spk Conc/ LCS Result/ Tot/Cnt Qu-Analy Aliq Date/Time RPD/ RER/ Batch # / Analyt/ Tracer CAS# Orig Rst Unit Uncert 2S al MDC Yield %Rec Method Size/ UCL UCL LCL/UCL Typ Qc Type Analyzed

9310 ALPHAB

1.982E-01

01/16/2007

18:10

1.06E+00 100.0

6353638 ALPHA

12587-46-1

BLK

-7.17E-02

pCi/L 3.1E-01

3.1E-01

D

Wednesday, January 24, 2007 STL Richland QC Blank Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\W05076.Edd, h:\Reportdb\edd\W05076.Ed

Lab Sample Id: JLTHC1AB **Sdg/Rept Nbr:** W05076 34298 **Collection Date:** 12/05/2006 10:28

Client Id: NA Matrix: WATER WATER Sample On Date:

Moisture/Solids%*: QC Type: BLK Received Date: 12/05/2006

SAF Nbr Contract Nbr **Test User** Case Nbr SAS Nbr Suffix Decant Distilled Volume File Id FSuffix RTyp MW6-SBB-A19981 ВО Н Batch # / Analyt/ Result/ Tot/Cnt Qu-Tracer Spk Conc/ Analy Aliq Date/Time RPD/ RER/ LCS Qc Type CAS# **Orig Rst** Unit Uncert 2S MDC Yield %Rec Method Size/ UCL LCL/UCL Typ al Analyzed UCL pCi/L 5.7E+00 9.81E+00 100.0 D 6353623 TC-99 -6.78E-01 TC99_ETVDSK 1.267E-01 01/13/2007 BLK 14133-76-7 4.0E+00 12:49

Wednesday, January 24, 2007 STL Richland QC Blank Report

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\\034298.Edd

 Lab Sample Id:
 JLTHQ1AB
 Sdg/Rept Nbr:
 W05076
 34298
 Collection Date:
 12/06/2006 13:13

Client Id: NA Matrix: WATER WATER Sample On Date:

Moisture/Solids%*: QC Type: BLK Received Date: 12/06/2006

SAF Nbr Contract Nbr Test User Case Nbr SAS Nbr Suffix Decant Distilled Volume File Id FSuffix RTyp

MW6-SBB-A19981

BQ H

Spk Conc/ Analy Aliq Date/Time RPD/ RER/ LCS Batch # / Analyt/ Result/ Tot/Cnt Qu-Tracer Method Size/ Analyzed UCL UCL LCL/UCL Typ MDC Yield %Rec CAS# **Orig Rst** Unit Uncert 2S al Qc Type D pCi/L 1.6E-01 2.81E-01 98.9 1129LL SEP L 3.6009E+00 01/23/2007 6353627 I-129L -2.98E-02

BLK 15046-84-1 1.6E-01 L 19:52

rptFeadRadEdd v3.68

Lab Code: STLRL

Wednesday, January 24, 2007 STL Richland QC Blank Report Lab Code: STLRL

FormNbr: R FormatType: FEAD VersionNbr: 05 File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id: JLTHT1AB **Sdg/Rept Nbr:** W05076 34298 **Collection Date:** 12/08/2006 09:45

Client Id: NA Matrix: WATER WATER Sample On Date:

Moisture/Solids%*: QC Type: BLK Received Date: 12/08/2006

SAF Nbr Contract Nbr **Test User** SAS Nbr Suffix **Distilled Volume** File Id FSuffix RTyp Case Nbr Decant MW6-SBB-A19981 BS Н Batch # / Analyt/ Result/ Tot/Cnt Qu-Spk Conc/ Analy Aliq Date/Time RER/ LCS Tracer RPD/ CAS# **Orig Rst** Unit Uncert 2S al MDC Yield %Rec Method Size/ Analyzed UCL UCL LCL/UCL Typ Qc Type 6353628 Uranium -1.32E-02 ug/L 2.2E-03 8.32E-02 UTOT KPA 2.52E-02 01/19/2007 D BLK 7440-61-1 2.2E-03 ML 11:23

STL Richland QC Blank Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTHX1AB

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/11/2006 13:54

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BLK

12/11/2006 Received Date:

SAF		br Contract Nbr MW6-SBB-A19981		est User	Case	Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix R BV	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCI	R L Typ
6353631	U-234	3.41E-02	pCi/L	7.0E-02	U	1.63E-0	1 95.0		UISO_PLATE	_ 2.034E-01	01/12/2007				D
BLK	13966-29-5			7.0E-02						L	21:21				
6353631	U-235	0.00E+00	pCi/L	7.0E-02	U	1.63E-0	1 95.0		UISO_PLATE	_ 2.034E-01	01/12/2007				D
BLK	15117-96-1			7.0E-02						L	21:21				
6353631	U-238	0.00E+00	pCi/L	7.0E-02	U	1.63E-0	1 95.0		UISO_PLATE	_ 2.034E-01	01/12/2007				D
BLK	U-238			7.0E-02						L	21:21				

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH11CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/07/2006 11:41

RER/

UCL

Client Id:

NA

MW6-SBB-A19981

Matrix:

WATER

WATER

Sample On Date:

Received Date: 12/07/2006

Moisture/Solids%*:

Contract Nbr **Test User**

QC Type: SAS Nbr Case Nbr

MDC

BS

Decant

Distilled Volume

File Id

Batch # /

Qc Type

SAF Nbr

Analyt/ Result/ CAS# Orig Rst

Tot/Cnt Unit Uncert 2S pCi/L 2.1E+00

Qual

Tracer Yield 4.60E-01 75.4

Spk Conc/ %Rec 1.36E+01

Suffix

Analy Method SRISO SEP P

Aliq Size/ 1.004E+00

Date/Time RPD/ Analyzed UCL LCS

BF

LCL/UCL Typ D 70

FSuffix RTvp

Н

R

6353633 SR-90 BS 10098-97-2

1.31E+01

7.8E-01

96.5

01/19/2007 07:00

130

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH41CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

NA

WATER

BS

WATER

Sample On Date:

Moisture/Solids%*:

·0/_*.

Matrix: QC Type:

_..

Received F

Received Date: 12/06/2006

SAF I		ntract Nbr -SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant D	Distilled Volume	File	e Id		FSuffix F BH	RТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353636 BS	H-3 10028-17-8	2.54E+03	pCi/L	2.5E+02 2.0E+02		2.97E+02	100.0	2.72E+03 93.5	906.0_H3_LSC	5.00E-03 L	01/06/2007 23:10			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH41EM

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date:

12/06/2006

SAF	Nbr Co	ntract Nbr	Т	est User	Case	Nbr SA	S Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix	RTyp
	MW	6-SBB-A19981												BJ	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ
6353636	H-3	2.32E+03	pCi/L	2.4E+02		3.02E+02	100.0	2.72E+03	906.0_H3_LS	C 5.00E-03	01/07/2007			70	D
BS	10028-17-8			2.0E+02				85.1		L	01:54			130	

rptFeadRadEdd v3.68

12

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH51CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

12/06/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

SAFI		ntract Nbr 6-SBB-A19981	T	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	e File	e ld		FSuffix I BL	RТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353637 BS	BETA 12587-47 - 2	1.96E+01	pCi/L	4.2E+00 2.2E+00		2.42E+00	100.0	2.26E+01 86.8	9310_ALPHAE	3 1.994E-01 L	01/16/2007 13:29			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTH71CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

12/06/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

SAF		i-SBB-A19981		est User	Case	Nbr S	SAS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix F BN	Н Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353638 BS	ALPHA 12587-46-1	1.97E+01	pCi/L	5.3E+00 2.9E+00		9.55E-01	100.0	2.29E+01 85.9	9310_ALPHAI	3 1.997E-01 L	01/16/2007 18:10			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

130

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTHC1CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 10:28

13:51

Client Id:

BS

NA

1.3E+01

WATER

WATER

Sample On Date:

Moisture/Solids%*:

14133-76-7

QC Type:

Matrix:

BS

Received Date:

12/05/2006

SAF		Contract Nbr MW6-SBB-A19981	Т	est User	Case	Nbr SA	S Nbr	Suffix	Decant	Distilled Volume	File	ld		FSuffix BP	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ
6353623	TC-99	5.07E+02	pCi/L	3.6E+01		9.81E+00	100.0	5.42E+02	TC99_ETVDS	< 1.254E-01	01/13/2007			70	D

93.5

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\VW05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTHQ1CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/06/2006 13:13

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

12/06/2006

Moisture/Solids%*:

QC Type:

BS

Cuffix

Received Date:

FOURTH DT.

SAF		Contract Nbr W6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix F BR	ЗТур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	Ř L Typ
6353627 BS	I-129L 15046-84-1	9.32E+00	pCi/L	1.2E+00 1.2E+00		6.13E-01	93.4	1.11E+01 83.7	I129LL_SEP_I	_ 3.4428E+00 L	01/23/2007 19:54			70 130	D

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTHT1CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/08/2006 09:45

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

BS

Received Date: 12/08/2006

SAF	Nbr Co	ontract Nbr	Т	est User	Case	Nbr S	SAS Nbr	Suffix	Decant	Distilled Volume	File	ld		FSuffix	RTyp
	MW	6-SBB-A19981												BT	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/U	R CL Typ
6353628	Uranium	3.60E+01	ug/L	4.2E+00		8.32E-02	2	3.58E+01	UTOT_KPA	2.52E-02	01/19/2007			70	D
BS	7440-61-1			4.2E+00				100.3		ML	11:27			130	

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTHT1DS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/08/2006 09:45

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

12/08/2006

Moisture/Solids%*:

QC Type:

BS

Received Date:

FSuffix RTyp

SAF Nbr

Contract Nbr MW6-SBB-A19981 Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

RPD/

BU Н

R

D

Batch # / Analyt/ Qc Type 6353628

Result/ CAS# Orig Rst Uranium 3.71E+00 7440-61-1

Tot/Cnt Uncert 2S Unit ug/L 3.8E-01 3.8E-01

Test User

Qu-Tracer MDC Yield al 8.38E-02

Spk Conc/ %Rec 3.61E+00

Analy Method UTOT KPA

Aliq Size/ 2.50E-02

Analyzed 01/19/2007 11:29

Date/Time

RER/ LCS UCL UCL

LCL/UCL Typ 70

BS

STL Richland QC Control Sample Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLTHX1CS

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/11/2006 13:54

Client Id:

NA

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type: BS

Received Date:

12/11/2006

SAF		ntract Nbr 6-SBB-A19981	T	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix I BW	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R L Typ
6353631	U-234	7.92E+00	pCi/L	1.7E+00		1.59E-01	99.8	8.70E+00	UISO_PLATE	_ 1.99E-01	01/12/2007			70	D
BS	13966-29-5			1.0E+00				91.0		L	21:21			130	
6353631	U-238	8.22E+00	pCi/L	1.7E+00		1.59E-01	99.8	9.11E+00	UISO_PLATE	_ 1.99E-01	01/12/2007			70	D
BS	U-238			1.0E+00				90.3		L	21:21			130	

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK3V31ER

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 10:28

09:57

3

20.0

Client Id:

B1L294

1.41E+02

Matrix:

WATER

Sample On Date:

Moisture/Solids%*:

14133-76-7

7.5E+00

QC Type: DUP **WATER**

Received Date:

12/05/2006

SAF Nt 107-010		Contract Nbr W6-SBB-A19981	Te	est User	Case	Nbr SA	AS Nbr	Suffix	Decant	Distilled Volume	File	e Id		FSuffix R	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R - Typ
6353623	Tc-99	1.36E+02	pCi/L	1.4E+01		9.81E+00	100.0		TC99_ETVDS	< 1.256E-01	01/13/2007	3.6	0.5		D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Collection Date: 12/06/2006 13:13

Lab Sample Id:

JK70P1DR

Sdg/Rept Nbr: W05076

34298

Client Id:

B1L216

Matrix:

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

WATER

Received Date:

12/06/2006

SAF Nbr	Contract Nbr	Test User	Case Nbr	SAS Nbr	Suffix	Decant	Distilled Volume	File Id	FSuffix RTyp
107-009	MW6-SBB-A19981								AW H

Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS R LCL/UCL Typ
	29L 046-84-1	6.05E-01 8.46E-01	pCi/L	3.6E-01 3.6E-01	U	4.53E-01	97.0		I129LL_SEP_L	3.9123E+00 L	01/23/2007 18:10	33.2 20.0	1. 3	D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK72X1FR

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

B1L650

Matrix:

WATER

WATER

Sample On Date:

Received Date:

12/06/2006

SAF Nbr

Moisture/Solids%*: Contract Nbr Test User

QC Type:

DUP

W07-011

MW6-SBB-A19981

Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id FSuffix RTyp

RER/

UCL

Batch # / Qc Type 6353636 H-3

DUP

Analyt/ Result/ CAS# Orig Rst 1.19E+03

10028-17-8

1.07E+03

Tot/Cnt Unit Uncert 2S pCi/L 1.9E+02 1.6E+02

Qu-Tracer al MDC Yield 2.96E+02 100.0

Spk Conc/ %Rec

Analy Method 906.0_H3_LSC

Aliq Size/ 5.00E-03

Date/Time Analyzed 01/07/2007 04:37

RPD/ UCL 10.1 20.0

LCS LCL/UCL Typ

ΑX

Н

D

R

0.8 3

STL Richland rptFeadRadEdd v3.68 U Qual - Analyzed for, but the result is less than the Mdc or gamma scan did not identify the nuclide.

J Qual - No U qualifier has been assigned and the result is below the Reporting Limit (CRDL).

B Qual- Analyte was found in the associated laboratory blank above the MDC.

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

Test User

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK72X1GR

Sdg/Rept Nbr: W05076

SAS Nbr

VU5U76

Suffix

34298 Collection Da

Collection Date: 12/05/2006 11:50

Client Id:

SAF Nbr

B1L650

Contract Nbr

Matrix:

WATER WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

Case Nbr

DUP

WAIEN

Decant

Received Date: 12/06/2006

Distilled Volume File Id FSuffix RTvn

W07-0		-SBB-A19981												AY	Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6353637 DUP	BETA 12587-47-2	6.75E+01 6.96E+01	pCi/L	9.6E+00 4.2E+00		2.97E+00	100.0		9310_ALPHAB	1.812E-01 L	01/16/2007 13:29	3.0 20.0	0.3 3		D

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

Moisture/Solids%*:

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK72X1HR

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 11:50

Client Id:

B1L650

Matrix: QC Type: **WATER**

WATER

Sample On Date:

Received Date:

12/06/2006

SAF Nbr W07-011

Contract Nbr MW6-SBB-A19981 Case Nbr SAS Nbr

DUP

Suffix Decant **Distilled Volume**

File Id FSuffix RTyp

RER/

Batch # /	Analyt/
Qc Type	CAS#
6353638	ALPHA

Result/ **Orig Rst** 6.52E-01

Tot/Cnt Uncert 2S Unit pCi/L 1.1E+00

Test User

Tracer MDC Yield

Spk Conc/ %Rec

Analy Method 9310 ALPHAB

Aliq Size/ 1.70E-01

Date/Time Analyzed 01/16/2007

UCL UCL 0.2 3

LCS

ΑZ

R LCL/UCL Typ

Н

D

DUP 12587-46-1

5.33E-01

1.1E+00

Qu-

al

2.36E+00 100.0

L

17:05

20.0 20.0

RPD/

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK75E1CR

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/07/2006 11:41

Client Id:

B1L3D3

Matrix:

WATER

WATER

Sample On Date:

12/07/2006

Moisture/Solids%*:

Test User

QC Type: DUP

Received Date:

FSuffix RTyp

SAF Nbr

Contract Nbr MAKE COD A40004

SAS Nbr Case Nbr

Suffix

Decant

Distilled Volume

File Id

S07-0	11 MW6	-SBB-A19981												BA	H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6353633	SR-90	1.92E+00	pCi/L	4.4E-01		4.38E-01	78.7		SRISO_SEP_P	1.0019E+00	01/19/2007	11.4	0.7		D
DUP	10098-97-2	2.15E+00		3.4E-01						L	07:00	20.0	3		

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

2.7E-03

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

ML

Lab Sample Id:

JK76T1CR

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/08/2006 09:45

Client Id:

DUP

B1LCP4

2.46E-02

Matrix:

WATER

WATER

Sample On Date:

11:53

Moisture/Solids%*:

7440-61-1

QC Type:

DUP

Received Date:

12/08/2006

20.0

3

SAF 1 S07-0		Contract Nbr W6-SBB-A19981	T	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	ld	I	FSuffix RT BB I	ур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R Typ
6353628	Uranium	2.43E-02	ug/L	2.7E-03	U	8.12E-02			UTOT_KPA	2.58E-02	01/19/2007	1.2	0.2	١	Э

STL Richland QC Duplicate Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JLDGA1ER

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/11/2006 13:54

Client Id:

B1LCK0

Matrix:

WATER WATER Sample On Date:

Moisture/Solids%*:

QC Type:

DUP

Received Date:

12/11/2006

						• •									
SAF 807-0		ontract Nbr 6-SBB-A19981	7	est User	Case	Nbr :	SAS Nbr	Suffix	Decant	Distilled Volume	Fil.	e Id		FSuffix R1	Тур Н
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UCL	R - Typ
6353631	U-234	3.57E+01	pCi/L	6.2E+00		1.40E-0	1 101.4		UISO_PLATE	_ 1.996E-01	01/12/2007	1.2	0.1		D
DUP	13966-29-5	3.62E+01		2.1E+00						L	21:20	20.0	3		
6353631	U-235	1.59E+00	pCi/L	5.1E-01		1.23E-0	1 101.4		UISO_PLATE	_ 1.996E-01	01/12/2007	3.3	0.1		D
DUP	15117-96-1	1.54E+00		4.4E-01						L	21:20	20.0	3		
6353631	U-238	3.12E+01	pCi/L	5.5E+00		1.40E-0	1 101.4		UISO_PLATE	_ 1.996E-01	01/12/2007	9.0	8.0		D
DUP	U-238	3.41E+01		2.0E+00						L	21:20	20.0	3		

STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK3W81EW

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/05/2006 08:54

Client Id:

B1L2C3

Matrix:

WATER

MS

WATER

Sample On Date:

Moisture/Solids%*:

Analyt/

QC Type:

Received Date:

12/05/2006

SAF Nbr 107-010

Contract Nbr

Case Nbr

SAS Nbr

Suffix

Decant

Distilled Volume

File Id

FSuffix RTyp ΑV Н

Batch # /

MW6-SBB-A19981

Test User

Tot/Cnt Qual

Tracer MDC Yield

Spk Conc/ %Rec 3.61E+03

Analy Method

Aliq Size/

Date/Time RPD/ Analyzed UCL 01/13/2007

RER/ LCS UCL

R LCL/UCL Typ D

Qc Type CAS# 6353623 Tc-99 MS 14133-76-7

Result/ Orig Rst 3.39E+03

Unit Uncert 2S 2.1E+02 pCi/L 3.2E+01

9.90E+00 100.0

94.0

TC99 ETVDSK 1.254E-01

09:57

60

140

STL Richland Qc Matrix Spike Report

Lab Code: STLRL

FormNbr: R

FormatType: FEAD

VersionNbr: 05

File Name: h:\Reportdb\edd\FeadIV\Rad\W05076.Edd, h:\Reportdb\edd\FeadIV\Rad\34298.Edd

Lab Sample Id:

JK76X1DW

Sdg/Rept Nbr: W05076

34298

Collection Date: 12/08/2006 10:51

Client Id:

B1LCN9

Matrix:

WATER

WATER

Sample On Date:

Moisture/Solids%*:

QC Type:

MS

Received Date:

12/08/2006

SAF I		ontract Nbr 6-SBB-A19981	Т	est User	Case	Nbr S	AS Nbr	Suffix	Decant	Distilled Volume	File	e ld		FSuffix F BC	RTyp H
Batch # / Qc Type	Analyt/ CAS#	Result/ Orig Rst	Unit	Tot/Cnt Uncert 2S	Qu- al	MDC	Tracer Yield	Spk Conc/ %Rec	Analy Method	Aliq Size/	Date/Time Analyzed	RPD/ UCL	RER/ UCL	LCS LCL/UC	R CL Typ
6353628	Uranium	3.86E+01	ug/L	1.4E+01		8.12E-02		3.49E+01	UTOT_KPA	2.58E-02	01/19/2007			60	D
MS	7440-61-1			1.4E+01				110.6		ML	12:11			140	



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/17/2007 4:38:06 PM

Lot No., Due Date:

J6L110155,J6L110156,J6L130175; 01/25/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353631; RUISO Ulso by ALP

SDG. Matrix:

W05076; WATER

SDG, Matrix:	W05076; WATER			
1.0 COC 1.1 Is the ICOC page	ge complete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0 QC Batch 2.1 Do the Summa	try/Detailed Reports include a calculated result for each sample listed on the QC Batch She	eet? Yeş	No	N/A
2.2 Are the QC app	propriate for the analysis included in the batch?	Yes	No	N/A
2.3 Is the Analytica	al Batch Worksheet complete; includes as appropriate, volumes, count times, etc?	Yeş	No	N/A
2.4 Does the Work	sheets include a Tracer Vial label for each sample?	Yes	No	N/A
3.0 QC & Sample				
3.1 Is the blank res	sults, yield, and MDA within contract limits?	Yes	No	N/A
3.2 Is the LCS resu	ult, yield, and MDA within contract limits?	Yes	No	N/A
3.3 Are the MS/MS	SD results, yields, and MDA within contract limits?	Yes	No	N/A
3.4 Are the duplicat	te result, yields, and MDAs within contract limits?	Yeş	No	N/A
3.5 Are the sample	yields and MDAs within contract limits?	Yes	No	N/A
I.0 Raw Data				
.1 Were results ca	alculated in the correct units?	Yes	No	N/A
.2 Were analysis	volumes entered correctly?	Yes	No	N/A
.3 Were Yields en	ntered correctly?	Yes	No	N/A
.4 Were spectra re	reviewed/meet contractual requirements?	Yes	No	N/A
.5 Were raw coun	nts reviewed for anomalies?	Yes	No	N/A
5.0 Other 5.1 Are all nonconfo	formances included and noted?	Yes	No	N/A
5.2 Are all required	I forms filled out?	Yeş	No	N/A
5.3 Was the correc	et methodology used?	Yeş	No	N/A
5.4 Was transcription	on checked?	Yeş	No	N/A
5.5 Were all calcula	ations checked at a minimum frequency?	Yeş	No	N/A
5.6 Åre worksheet e	entries complete and correct?	Yeş	No	N/A
0.0 Comments on a	any No response:	V		
First Level Revie	ew_Pan andersen Date_/	17.09		
STL Richland QAS_RADCALCv4.8.2	26	Page	e 1	



QC Batch Number:	6353631
	w05076 .

Review Item	Yes (√)	No (V)	N/A (√)
A. Sample Analysis			 (·)
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract	1		
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?	-		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			
4. Was transcription checked? 5. Were all calculations checked at a minimum frequency?			
		,	

Second Level Review:



Data Review/Verification Checklist

1/18/2007 10:59:45 AM

RADIOCHEMISTRY, First Level Review Lot No., Due Date: J6L110147; 01/25/2007 Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6353638; RALPHA-A Alpha by GPC-Am SDG, Matrix: W05076; WATER 8.0 Correction Calculation Protocol Used. Yeş No N/A OK 8.01 The Appropriate Methods Were Used To Analyze the Samples Yeş No N/A 8.02 Final Results Are in the Appropriate Activity Units Yeş No N/A 8.03 Batch Contains the Required QC Appropriate for the Method Yeş No N/A OK 8.04 The Correct Tracer and QC Vials Where Used in the Samples Yeş No N/A OK 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used No/ N/A Yes Analysis Volume => JK72X1AC 167.10<200.00 Q:VB 8.07 The Correct Count Geometry was Used. No N/A 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. No N/A Yes 8.09 Method Blank is within Control Limits. No N/A OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. Yes No N/A No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). No N/A Yeş 8.13 QAS Specified Duplicate Equation Value within Control Limits. No N/A Yeş OK (RPD) 8.14 LCS within Control Limits. Yes No N/A OK 8.15 MLCS within Control Limits. Yes No N/A No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits. Yes No N/A No Matrix Spike Samples (MS) found in Batch! 8.17 Tracer within Control Limits. No N/A 8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No N/A Yes 8.19 Sample Specific MDC <= CRDL. No N/A OK 8.2 Comments: 8.21 Result < Lc, Activity Not Detected, U Flag. N/A Yes No No Limit Specified! 8.22 Result < Mdc, Activity Not Detected, U Flag. No N/A No Positive Results OK 8.23 Result <= Action Level, when Defined. No N/A OK; No Action Level Found => ALPHA OK; No Callin Level Found => ALPHA 8.24 Result + 3s >=0, Not Too Negative. No N/A OK 8.25 Counting Spectrum are within FWHM Limits. Yes No N/A No FWHM found in Batch Data!

STL Richland

QAS RADCALCv4.8.26

Page 1

8.26	Instruments have Current Calibrations.	Yes	No	N/A
	Correct Count Library Used. No Count Library found in Batch Data!	Yes	No	N/A
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	nk)s	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	Véesi c	n Neo) .	N/A
8.3 (Comments:	***************************************		- sa wasayani viramalina va
8.31	Results Blank Subtracted as Appropriate. OK	Yeş	No	N/A
s Tanan commonwell become		(Y)	**************************************	***************************************
	Level Review X a Juston 80 Pans Anderson Date 118187			

STL Richland

1-18-07



QC Batch Number:	6353638
	w05076.

Review Item	Yes (√)	No (V)	$N/A(\sqrt{)}$
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			.
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?	American		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?	-		
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			

Second Level Review Date: 1-19-07



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/18/2007 11:01:50 AM

Lot No., Due Date: J6L110147; 01/25/2007 Client, Site: 384868; PGW 615HANFORD HANFORD QC Batch No., Method Test: 6353637; RBETA-SR Beta by GPC-Sr/Y SDG. Matrix: W05076; WATER 8.0 Correction Calculation Protocol Used. N/A No 8.01 The Appropriate Methods Were Used To Analyze the Samples No N/A Yes 8.02 Final Results Are in the Appropriate Activity Units Yeş No N/A 8.03 Batch Contains the Required QC Appropriate for the Method Yes No N/A 8.04 The Correct Tracer and QC Vials Where Used in the Samples No N/A Yeş 8.05 Sample was Appropriately Traced Before or After Fractionating the Sample Yes No N/A 8.06 At Least the Minimum Sample Volume Was Used Yes No N/A Analysis Volume => JK72X1AD 182.20<200.00 Q:VB 8.07 The Correct Count Geometry was Used. Yes No N/A 8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved. Yeş No N/A 8.09 Method Blank is within Control Limits. No N/A OK 8.1 Comments: 8.11 Matrix Blank is within Control Limits. N/A Yes No No Matrix Blanks (MBlks) found in Batch! 8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary). No N/A Yeş 8.13 QAS Specified Duplicate Equation Value within Control Limits. No N/A Yes OK (RPD) 8.14 LCS within Control Limits. Yes No N/A OK 8.15 MLCS within Control Limits. N/A Yes No No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits. Yes No N/A No Matrix Spike Samples (MS) found in Batch! 8.17 Tracer within Control Limits. No N/A 8.18 Samples are above Minimum Tracer Yield (No Failed Samples) No N/A Yes 8.19 Sample Specific MDC <= CRDL. No N/A OK 8.2 Comments: 8.21 Result < Lc, Activity Not Detected, U Flag.</p> Yes No N/A No Limit Specified! 8.22 Result < Mdc, Activity Not Detected, U Flag.</p> No N/A Yes Batch Positive Result => JK72X1AD BETA 7.0E+01 L:3.0E+00 8.23 Result <= Action Level, when Defined. No N/A OK: No Action Level Found => BETA OK; No Callin Level Found => BETA 8.24 Result + 3s >=0, Not Too Negative. No N/A 8.25 Counting Spectrum are within FWHM Limits. Yes No N/A No FWHM found in Batch Data!

STL Richland

QAS RADCALCv4.8.26

Page 1

8.26	Instruments have Current Calibrations.	Yes	No	N/A
	Correct Count Library Used. No Count Library found in Batch Data! Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version.)	Yes		W
	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	Vr€es ic	ninbo).	N/A
	Comments:			
8.31	Results Blank Subtracted as Appropriate. OK	Yes	No	N/A
-1) geographic			emental de de bereign	ALE LEGISLATION OF PACKAGES
	et Level Review Date Ultonan Pam Andusa Date 111810		_	
STIF	Richland			

QAS_RADCALCv4.8.26



Review Item	Yes (√)	No (V)	N/A (V
A. Sample Analysis	1 33 (1)	110(1)	11/21
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract	1		
Detection Limit?			.
3. Are the correct isotopes reported?			
B. QC Samples			
 Is the Minimum Detectable Activity for the blank result ≤ the 			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?	-		1
9. Do the duplicate sample results and yields meet acceptance		-	
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?			·

Herry a alan: Date: 1-



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 8:13:30 AM

Page 1

Lot No., Due Date:

J6L080147,J6L110154,J6L130175; 01/25/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353633; RSR85907 Sr-85/90 by GPC-7

SDG, Matrix:

STL Richland

QAS_RADCALCv4.8.26

W05076; WATER

SDG, Matrix:	W05076; WATER			
1.0 COC 1.1 Is the ICOC page con	mplete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0 QC Batch 2.1 Do the Summary/Deta	ailed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yeş	No	N/A
2.2 Are the QC appropria	te for the analysis included in the batch?	Yes	No	N/A
2.3 Is the Analytical Batch	h Worksheet complete; includes as appropriate, volumes, count times, etc?	Yeş	No	N/A
2.4 Does the Worksheets	s include a Tracer Vial label for each sample?	Yes	No	N/A
3.0 QC & Samples 3.1 Is the blank results, yi	ield, and MDA within contract limits?	Yes	No	N/A
3.2 Is the LCS result, yield	d, and MDA within contract limits?	Yes	No	N/A
3.3 Are the MS/MSD resu	ults, yields, and MDA within contract limits?	Yes	No	N/A
3.4 Are the duplicate resu	ult, yields, and MDAs within contract limits?	Yes	No	N/A
3.5 Are the sample yields	and MDAs within contract limits?	Yes	No	N/A
4.0 Raw Data 4.1 Were results calculate	ed in the correct units?	Yes	No	N/A
4.2 Were analysis volume	es entered correctly?	Yes	No	N/A
4.3 Were Yields entered of	correctly?	Yes	No	N/A
4.4 Were spectra reviewe	ed/meet contractual requirements?	Yes	No	N/A
4.5 Were raw counts revie	ewed for anomalies?	Yes	No	N/A
5.0 Other 5.1 Are all nonconformand	ces included and noted?	Yes	No	N/A
5.2 Are all required forms	filled out?	Yes	No	N/A
5.3 Was the correct meth	odology used?	Yes	No	N/A
5.4 Was transcription che	ecked?	Yes	No	N/A
5.5 Were all calculations	checked at a minimum frequency?	Yes	No	N/A
5.6 Are worksheet entries	complete and correct?	Yes	No	N/A
6.0 Comments on any No	response: ルータョンチ			
	Pan and Inderson Date 1-23.07			
First Level Review	an Underson Date 1-23.07			



Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis		1	
1. Are the sample yields within acceptance criteria?			
. Is the sample Minimum Detectable Activity < the Contract	 	 	
Detection Limit?	- Lander Control of the Control of t		-
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?	· market		
3. Is the blank result < the Contract Detection Limit?	market and a second		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?	- Lander		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection	and the same of th		
Limit?			
B. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
riteria?	American Control of the Control of t		
C. Other			<u> </u>
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?	" Superior of the same of the		
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
5. Were units checked?	- Andrews		-

Second Level Review: Sherry a alam. Date: 1-65-07

Clouseau **Nonconformance Memo**



NCM #: 10-09324

NCM Initiated By: Pam Anderson Date Opened: 01/23/2007

Date Closed:

Classification: Deficiency

Status: GLREVIEW

Production Area: Environmental - Sep

Tests: Sr-85/90 by GPC-7

Lot #'s (Sample #'s): J6L080147 (1,2,3,4),

J6L110154 (1), J6L130175 (2,3), J6L190000 (633),

QC Batches: 6353633

Nonconformance: Technician Error

Subcategory: Laboratory error: analyst error

Problem Description / Root Cause

Name Pam Anderson Date

Description

01/23/2007

The tech notes in the comment section that sample JK3XF1AC may have slightly

contaminated sample JK75E1AA. The results show JK3XF1AC is negative and JK75E1AA has a duplicate that agrees with it very well. Data will be accepted.

Corrective Action

Name

Date

Corrective Action

Pam Anderson 01/23/2007 The tech will be more careful.

Client Notification Summary

Client

Project Manager

Notified

Response How Notified

Note

Response

Response Note

Quality Assurance Verification

Verified By

Due Date

Status

Notes

This section not yet completed by QA.

Approval History

Date Approved

Approved By

Position

Date Printed: 1/23/2007 Page 1 of 1



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/24/2007 8:30:20 AM

Lot No., Due Date:

J6L080147,J6L110136; 01/25/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353627; RGAMLEPS Gamma by LEPS

SDG, Matrix:

W05076; WATER

SDG, Matrix:	W05076; WATER			
1.0 COC 1.1 Is the ICOC page comp	lete; includes all applicable analysis, dates, SOP numbers, and revisions?	Yes	No	N/A
2.0 QC Batch 2.1 Do the Summary/Detaile	ed Reports include a calculated result for each sample listed on the QC Batch Sheet?	Yeş	No	N/A
2.2 Are the QC appropriate	for the analysis included in the batch?	Yes	No	N/A
2.3 Is the Analytical Batch V	Norksheet complete; includes as appropriate, volumes, count times, etc?	Yeş	No	N/A
2.4 Does the Worksheets in	nclude a Tracer Vial label for each sample?	Yes	No	N/A
3.0 QC & Samples 3.1 Is the blank results, yield	d, and MDA within contract limits?	Yes	No	N/A
3.2 Is the LCS result, yield,	and MDA within contract limits?	Yes	No	N/A
3.3 Are the MS/MSD results	s, yields, and MDA within contract limits?	Yes	No	N/A
3.4 Are the duplicate result,	yields, and MDAs within contract limits?	Yes	No	N/A
3.5 Are the sample yields a	nd MDAs within contract limits?	Yes	No	N/A
1.0 Raw Data 1.1 Were results calculated	in the correct units?	Yes	No	N/A
.2 Were analysis volumes	entered correctly?	Yes	No	N/A
.3 Were Yields entered cor	rrectly?	Yes	No	N/A
.4 Were spectra reviewed/	meet contractual requirements?	Yes	No	N/A
1.5 Were raw counts review	ved for anomalies?	Yes	No	N/A
.0 Other .1 Are all nonconformance	entre province the state of the second like and the second and the	Yes	No	N/A
5.2 Are all required forms fil	lled out?	Yeş	No	™ N/A
5.3 Was the correct method	dology used?	Yes	No	N/A
.4 Was transcription check	xed?	Yes	No	N/A
5.5 Were all calculations ch	ecked at a minimum frequency?	Yeş	No	N/A
.6 Are worksheet entries c	complete and correct?	Yeş	No	N/A
6.0 Comments on any No re	esponse:			
		***************************************	***************************************	***************************************
First Level Review	an Cincleese Date 1-24-07		_	
STL Richland QAS_RADCALCv4.8.26		Page	1	



OC Batch Number:	6	353611	
•		W05074	

Review Item	Yes (√)	No (V)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
 Is the Minimum Detectable Activity for the blank result ≤ the 			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?	age of the same of		
3. Is the blank result < the Contract Detection Limit?	garden en e		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			•
Limit?			sear teams
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			ļ
C. Other			
1. Are all Nonconformances included and noted?	1		
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?	1		
6. Were units checked?			

Second Level Review Shury a Class Date: 1-24-07



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/17/2007 4:45:30 PM

Lot No., Due Date:

J6L080147,J6L110136,J6L110147; 01/25/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353623; RTC99 Tc-99 by LSC

SDG, Matrix: W05076; WATER

8.0 Correction Calculation Protocol Used.	Yes No N/A
OK 8.01 The Appropriate Methods Were Used To Analyze the Samples	Yeş No N/A
OK	
8.02 Final Results Are in the Appropriate Activity Units	Yeş No N/A
OK	
8.03 Batch Contains the Required QC Appropriate for the Method	Yes No N/A
OK	Voc. No. N/A
8.04 The Correct Tracer and QC Vials Where Used in the Samples Incorrect Tracer/Vial => JK3W81AE TCSG<>TCSE Q:V9	Yes No N/A
8.05 Sample was Appropriately Traced Before or After Fractionating the Sample	Yes No N/A
OK	
8.06 At Least the Minimum Sample Volume Was Used	Yeş No N/A
ОК	
8.07 The Correct Count Geometry was Used.	Yeş No N/A
OK	
8.08 The Sample was Counted for the Minimum Count Time or CRDL was Achieved.	Yes No N/A
OK	
8.09 Method Blank is within Control Limits.	Yes No N/A
OK 8.1 Comments:	
o. F Comments.	
8.11 Matrix Blank is within Control Limits.	Yes No N/A
No Matrix Blanks (MBlks) found in Batch!	V
8.12 Method Blank(s) < QAS Limit Value (No B Flag Necessary).	Yeş No N/A
ОК	
8.13 QAS Specified Duplicate Equation Value within Control Limits.	Yes No N/A
OK (RPD)	
8.14 LCS within Control Limits.	Yes No N/A
OK	· · · · · · · · · · · · · · · · · · ·
8.15 MLCS within Control Limits.	Yes No N/A
No Matrix Spikes (MLCS) found in Batch! 8.16 MS within Control Limits.	Yeş No N/A
OK	
8.17 Tracer within Control Limits.	Yes No N/A
No Tracers found in Batch!	
8.18 Samples are above Minimum Tracer Yield (No Failed Samples)	Yes No N/A
No Tracers found in Batch!	<u> </u>
8.19 Sample Specific MDC <= CRDL.	Yes No N/A
OK	
8.2 Comments:	
8.21 Result < Lc, Activity Not Detected, U Flag.	Yes No N/A
No Limit Specified!	res no m
8.22 Result < Mdc, Activity Not Detected, U Flag.	Yeş No N/A
No Positive Results	
OK Calc_IDL Not Calculated	*
8.23 Result <= Action Level, when Defined.	Yes No N/A
OK; No Action Level Found => Tc-99	
TC-99	
OK; No Callin Level Found => Tc-99	
TC-99	Yeş No N/A
8.24 Result + 3s >=0, Not Too Negative. OK	ies No N/A
VIX	e programme de la companya del companya de la companya del companya de la companya del la companya de la compan
STL Richland	Page 1
QAS_RADCALCv4.8.26	i age i

	No FWHM found in Batch Data!	Yes	No No	N/A
	 Correct Count Library Used. No Count Library found in Batch Data! Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version. 		No No	V
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later v	Yeesio	on Neò .	N/A
8.3	Comments:			
8.31	Results Blank Subtracted as Appropriate. OK	Yeş	No	N/A
Fire	st Level Review Ram ancherson Date 17707			
- H S	Date 11 U		-	

STL Richland

QAS_RADCALCv4.8.26



Review Item	Yes (√)	No (V)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?	and the same of th		
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
1. Is the Minimum Detectable Activity for the blank result ≤ the			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			, , , , , , , , , , , , , , , , , , , ,
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			-
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency? 6. Were units checked?	1 / /		

LS-038B, Rev. 10, 8/02



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/9/2007 4:51:00 PM

Lot No., Due Date: J6L110147,J6L130175; 01/25/2007

Client, Site: 384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353636; RTRITIUM H-3 by LSC

SDG, Matrix: W05076; WATER

SDG, Matrix:	W05076; WATER			
8.0 Correction Calculation	n Protocol Used.	Yes	No	N/A
OK 8 01 The Appropriate Me	thods Were Used To Analyze the Samples	Yes	No	N/A
OK OK				
8.02 Final Results Are in OK	the Appropriate Activity Units	Yes	No	N/A
	Required QC Appropriate for the Method	Yes	No	N/A
8.04 The Correct Tracer a	and QC Vials Where Used in the Samples	Yes	No	N/A
OK 8.05 Sample was Approp	oriately Traced Before or After Fractionating the Sample	Yeş	No	N/A
OK		<u>V</u>		
Analysis Volume => JK JK73K1AA 5.00<10.00 JLDGA1AA 5.00<10.0	0 00 Q:VB	Yes	M	*****************
8.07 The Correct Count Count Geometry => JLT JLTH41AG SVP15/5<: JLTH41AA SVP15/5<: JLTH41AC SVP15/5<: JLTH41AD SVP15/5<: JLTH41AE SVP15/5<: JK72X1AA SVP15/5<: JK72X1AF SVP15/5<: JK73K1AA SVP15/5<: JLDGA1AA SVP15/5<	TH41AF SVP15/5<>SVP10/10 SVP10/10 >SVP10/10	Yes	No	N/A
	ounted for the Minimum Count Time or CRDL was Achieved.	Yes	No	N/A
8.09 Method Blank is with	nin Control Limits.	Yes	No	N/A
OK 8.1 Comments:				
8.11 Matrix Blank is withir OK	n Control Limits.	Yes	No	N/A
	QAS Limit Value (No B Flag Necessary).	Yes	No	N/A
8.13 QAS Specified Dupli	icate Equation Value within Control Limits. K72X1AF H-3 25.0 (RPD)	Yes	No	N/A
8.14 LCS within Control L OK	r a com a communicação com a com mismo a com a com a com a com a com a communicação de compresso de communicações de communic	Yes	No	N/A
8.15 MLCS within Control	I Limits.	Yes	No	N/A
8.16 MS within Control Li		Yes	No	N/A
8.17 Tracer within Contro No Tracers found in Bat	ol Limits.	Yes	No	N/A
	Minimum Tracer Yield (No Failed Samples)	Yes	No	N/A
8.19 Sample Specific MD		Yes	No	N/A
OK 8.2 Comments:		<u></u>		
8.21 Result < Lc, Activity No Limit Specified!	Not Detected, U Flag.	Yes	No	N/A
8.22 Result < Mdc, Activit	ty Not Detected, U Flag.	Yeş	No	N/A
No Positive Results OK Calc_IDL Not Calc		V	*******************************	
STL Richland		Page	1	
QAS_RADCALCv4.8.26				

8.23	Result <= Action Level, when Defined. OK; No Action Level Found => H-3	Yes	No	N/A
8.24	OK; No Callin Level Found => H-3 I Result + 3s >=0, Not Too Negative.	Yeş	No	N/A
0 25	OK Counting Spectrum are within FWHM Limits.	Yes	No	NI/A
0.23	No FWHM found in Batch Data!	162	IVO	V
8.26	Instruments have Current Calibrations.	Yes	No	N/A
8.27	Correct Count Library Used.	Yes	No	N/A
	No Count Library found in Batch Data!			V
8.28	Instrument Background within Limits at Time of Counting. (Not Applicable to this version. To be developed in later version	on tées	No	N/A
8.29	Instrument Check Source within Limits at the Time of Counting. (Not Applicable to this version. To be developed in later	∨Yéess io	itNeò.	N/A
8.3	Comments:		,,.,.,	
8.31	Results Blank Subtracted as Appropriate.	Yeş	No	N/A
			1.03W A	
				Constant
	t Level Review Pan and Andusem Date 1-10-07			
1				
STL F	Richland	Page	2	

QAS_RADCALCv4.8.26



OC Batch Number:	43536
•	W 05076

Review Item	Yes (√)	No (√)	$N/A(\sqrt{)}$
A. Sample Analysis		1	
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract	1		
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
 Is the Minimum Detectable Activity for the blank result ≤ the 			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?	2		
4. Is the blank result > the Contract Detection Limit but the sample			
result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?			
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?			
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			
1. Are all Nonconformances included and noted?			
2. Are all required forms filled out?			
3. Was the correct methodology used?			
4. Was transcription checked?			
5. Were all calculations checked at a minimum frequency?			
6. Were units checked?		Ì	1 .



Data Review/Verification Checklist RADIOCHEMISTRY, First Level Review

1/23/2007 3:35:06 PM

Lot No., Due Date:

J6L110151,J6L110156,J6L130175; 01/25/2007

Client, Site:

384868; PGW 615HANFORD HANFORD

QC Batch No., Method Test: 6353628; RUNAT UNat by KPA

SDG, Matrix:

QAS_RADCALCv4.8.26

W05076; WATER

SDG, Matrix:	WU5076; WATER			
1.0 COC 1.1 Is the ICOC page co	omplete; includes all applicable analysis, dates, SOP numbers, and revi	sions?	No	N/A
2.0 QC Batch 2.1 Do the Summary/De	etailed Reports include a calculated result for each sample listed on the	QC Batch Sheet? Yes	No	N/A
2.2 Are the QC appropr	iate for the analysis included in the batch?	Yes	No	N/A
2.3 Is the Analytical Bat	tch Worksheet complete; includes as appropriate, volumes, count times	, etc? Yes	No	N/A
2.4 Does the Workshee	ets include a Tracer Vial label for each sample?	Yes	No	N/A
3.0 QC & Samples 3.1 is the blank results,	yield, and MDA within contract limits?	Yes	No	N/A
3.2 Is the LCS result, yi	eld, and MDA within contract limits?	Yes	No	N/A
3.3 Are the MS/MSD re:	sults, yields, and MDA within contract limits?	Yes	No	N/A
3.4 Are the duplicate re	sult, yields, and MDAs within contract limits?	Yes	No	N/A
3.5 Are the sample yield	ds and MDAs within contract limits?	Yes	No	N/A
.0 Raw Data .1 Were results calcula	ated in the correct units?	Yes	No	N/A
.2 Were analysis volur	nes entered correctly?	Yes	No	N/A
.3 Were Yields entered	d correctly?	Yes	No	N/A
.4 Were spectra review	wed/meet contractual requirements?	Yes	No	N/A
.5 Were raw counts re	viewed for anomalies?	Yes	No	N/A
5.0 Other 5.1 Are all nonconforma	ances included and noted?	Yes	No	N/A
5.2 Are all required form	ns filled out?	Yes	No	N/A
3.3 Was the correct me	thodology used?	Yes	No	N/A
6.4 Was transcription cl	necked?	Yes	No	N/A
.5 Were all calculation	s checked at a minimum frequency?	Yes	No	N/A
5.6 Are worksheet entri	es complete and correct?	Yes	No	N/A
See NCM.	No response: 0 · 0 9 3 2 8 11) · 0 9 33 0			
First Level Review _	Pan andusm	Date		
STL Richland QAS_RADCALCv4.8.26		Page	∋ 1	



OC Batch Number: 42014X			
•			
Review Item	Yes (√)	No (√)	N/A (√)
A. Sample Analysis			
1. Are the sample yields within acceptance criteria?			
2. Is the sample Minimum Detectable Activity < the Contract			
Detection Limit?			
3. Are the correct isotopes reported?			
B. QC Samples			
 Is the Minimum Detectable Activity for the blank result ≤ the 			
Contract Detection Limit?			
2. Does the blank result meet the Contract criteria?			
3. Is the blank result < the Contract Detection Limit?			
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result < the Contract Detection Limit?			
5. Is the LCS recovery with contract acceptance criteria?	· sand		
7. Is the LCS Minimum Detectable Activity ≤ the Contract Detection			
Limit?			
8. Do the MS/MSD results and yields meet acceptance criteria?	+		
9. Do the duplicate sample results and yields meet acceptance			
criteria?			
C. Other			—
1 Are all Names for the last of the 1	1	1	}

riteria?				
C. Other				٠
. Are all Nonconformances included and noted?		}		
. Are all required forms filled out?				
. Was the correct methodology used?				
. Was transcription checked?				
. Were all calculations checked at a minimum frequency?				
. Were units checked?		•		
Comments on any "No" response: Su N CM				
	V	7-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1		
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	,			
Second Level Review Therugh a Clar	`	Date: <u>/ </u>	3-07	-gr

Clouseau Nonconformance Memo



NCM #: 10-09328

NCM Initiated By: Pam Anderson Date Opened: 01/23/2007

Date Closed:

Classification: **Deficiency**

Status: GLREVIEW

Production Area: Bioassay Sep

Tests: UNat by KPA

Lot #'s (Sample #'s): J6L110151 (1,2,3),

J6L110156 (1,2,3,4), J6L130175 (1,2,3,4),

J6L190000 (628), J7A020172

(1,2,3,4), J7A030000 (442),

QC Batches: 6353628, 7003442

Nonconformance: Technician Error

Subcategory: Laboratory error: analyst error

Problem Description / Root Cause

<u>Name</u>

<u>Date</u>

Description

Pam Anderson

01/23/2007

The counting tech forgot to count a blank at the end of the calibration on Jan. 22,2007. A blank was counted at the end of batch 7003442 that was acceptable.

Corrective Action

Name

Date

Corrective Action

Pam Anderson

01/23/2007

The tech was reminded that a blank must be counted at the end of calibration and

next time it is forgotten all data that day will have to be recounted.

Client Notification Summary

Client

Project Manager

Notified

Response How Notified

Note

Response

Response Note

Quality Assurance Verification

Verified By

Due Date

<u>Status</u>

<u>Notes</u>

This section not yet completed by QA.

Approval History

Date Approved

Approved By

Position

Date Printed: 1/23/2007

Clouseau Nonconformance Memo



NCM #: 10-09330

NCM Initiated By: Pam Anderson Date Opened: 01/23/2007

Date Closed:

Classification: Anomaly

Status: GLREVIEW

Production Area: Environmental - Sep

Tests: UNat by KPA

Lot #'s (Sample #'s): J6L110151 (1),

QC Batches: 6353628

Nonconformance: Other (describe in detail)
Subcategory: Other (explanation required)

Problem Description / Root Cause

Name Pam Anderson <u>Date</u>

Description

01/23/2007

Sample JK7341AA showed some matrix effect during counting. The lifetime was out, low. The sample was recounted the next day at 1-10 dillution. The recount has a

good lifetime.

The sample was recounted on the day a blank was not counted after calibration as

noted in NCM# 10-09328.

Corrective Action

<u>Name</u>

Date

Corrective Action

Pam Anderson

01/23/2007

The tech has been given further training on being observant.

Client Notification Summary

Client

Project Manager

Notified

Response How Notified

Note

Response

Response Note

Quality Assurance Verification

Verified By

Due Date

Status

Notes

This section not yet completed by QA.

Approval History

Date Approved

Approved By

Position

Date Printed: 1/23/2007 Page 1 of 1

PNNL U	10801	47	7		CHAI	NOF	CUSTODY/	SAMPLE ANALYS	SIS REQUEST	1	C.O.C. #	107-0	10-58
C	DO 500	1 G 1.14	9-07				COSTODIA	OZRIVIR IJIJ ZRI VZRI E (-	Pac	ge <u>1</u> of	
Collector	Fluor Hanford		,			Contact/Re			Telephone No. 509-376-5056	MSIN		FAX	
AF No.						Sampling ()rigin		Purchase Order				
			***************************************			Hanford		*	Ice Chest No.	0	Temp.		
2ZP1-LOL NO	OVEMBER 2006	<u> </u>					WF-N-50	6-7		Ross	1 Chip.		
hinned To (La) Severn Trent I	h) Incornorated_Ric	hland		hayona odminin dismonara sono		Method of Govt. Ve		•	Bill of Lading/A	ir Bill No.			
rotocol CERCLA		Maria (Maria			WARRING CO.			ority: 45 Days	Offsite Property	No.		*******	
** ** Contains I	MPLE HAZARI Radioactive Materia Order 5400.5 (1996	al at con	ncentrations that	are not regulat	ted for transpo	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNT closure of 14 days. WSCF: Batch all PNNL GW samples		, G, I, S, and W 07 S	vity Exem AFs into o	notion: Yes ne SDG, not to	✓ No L exceed SDG
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample Anal	ysis	71V.h.		Preservati	ive
B1L289		W	12.5-06	0919	1x20-mL	P	Activity Scan	— ————————————————————————————————————	Mark 1997 - 1997	None		**************************************	i
B1L289		W	ı	1	2x4000-r	nL G/P	I129LL_SEP_LEF	PS_GS_LL: I-129 (1)		None			
B1L289		W		The same of the sa	1x500-m	LΡ	TC99_ETVDSK_I	_SC: Tc-99 (1)		HCl to pH <2		**************************************	***************************************
B1L289		W	1	1	3x1000-r	mL G/P	SRISO_SEP_PRI	ECIP_GPC: Sr-90 (1)		HNO3 to pH <2			
****		<u> </u>											
								<i>JK3</i>	XT				
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Relinquished By				The state of the s	Date/	Time	Received By		Date/Time	W = O =	Water Oil Air	I. V X	= Liquid = Vegetation = Other
Relinquished By					Date/	Time	Received By		Date/Time				
FINAL SAMI		Method	l (e.g., Return to	customer, per	lab procedure	e, used in proc	ess)	Disposed By		A AMA	Dat	e/Time	

PNNLJ6 L	.08014 NO 50	7	7			CHAI	N OF (CUSTODY/	SAMPLE ANALYSIS F	REQUEST		# I07-010 - age <u>1</u> of <u>1</u>	
				***********			Contact/Re			Telephone No.	MSIN	FAX	
	or Hanford SICKLE	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,					Dot Stew Sampling C			509-376-5056 Purchase Order/	Charge Code		\longrightarrow
I07-010						·····	Hanford		The second secon		· · · · · · · · · · · · · · · · · · ·		
Project Title 2ZP1-LOL NOV	EMBER 2006						Ita	VF.N-506-	/	Ice Chest No.	RUSS Temi).	
Shinned To (Lab)			en interestration interestration communication into	NANCO PROPERTY NA			Method of			Bill of Lading/Ai	r Bill No.		
Severn Trent Inco Protocol	ornorated. Ric	hland	en provincia de la compansión de la comp	PARTICIPATION OF	ALIK PONTONINENSENDON		Govt. Ve			Offsite Property	No.		
CERCLA								Pric	ority: 45 Days	l			
POSSIBLE SAMP ** ** Contains Rad releasable per DOE Or	lioactive Materia	ıl at cor	ncentrations that	t are no	ot regula	ted for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS Hold All Labs except WSCF: Batch all PNNL sample closure of 14 days. WSCF: Batch all PNNL GW samples submitted		G, I, S, and W 07 SAFs into	emption: Yes V Notes one SDG, not to exceed	i SDG
Sample No.	Lab ID	*	Date	T	 Γime	No/Type	Container		Sample Analysis			Preservative	
B1L299		w	12-5-56	11	02	1x20-ml	_ P	Activity Scan			None		
B1L299		W	1	 	1	2x4000-	mL G/P	I129LL_SEP_LEP	PS_GS_LL: I-129 (1)		None		31
B1L299		W			1	1x500-m	nL P	TC99_ETVDSK_L	SC: Tc-99 (1)		HCl to pH <2		
B1L299		W		1 -	-	3x1000-	mL G/P	SRISO_SEP_PRE	ECIP_GPC: Sr-90 (1)		HNO3 to pH <2		
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Relinquished By							5 2006 Time	Received By	M. S. Smith	Date/Time	S = Soil SE = Sedime SO = Solid SI = Sludge W = Water	$\begin{array}{cccc} DS &=& Dr\\ DI. &=& Dr\\ T &=& Ti\\ WI &=& W\\ I. &=& Lic\\ \end{array}$	rım Limi ssue 'ine
Relinquished By				***************************************	AW F	Date	Time	Received By		Date/Time	O = Oil A = Air		egetation
Relinquished By	Authts					Date.	/Time	Received By		Date/Time			
FINAL SAMPL DISPOSITION		Method	d (e.g., Return t	o custo	omer, per	lab procedur	re, used in proc	ess)	Disposed By		Ι	Date/Time	Was (

PNNL	J6 l	L080 U050	14' 76	7			CHAI	N OF	CUSTODY/	SAMPLE	ANALYSI	IS RE	QUEST		C.O.	I	07-01 (
Conector	S. Serecht B. Bi	amore	* ;					Contact/Re	equester			Tele	ephone No.	ingungaritus ————————————————————————————————————	MSIN	FAX		-
SAF No.	R. T. SK	CKLE			<u> </u>			Dot Stew Sampling (09-376-5056 chase Order		Code			
I07-010								Hanford						Charge	Code			
Project Title 2ZP1-LOL	NOVEN	IBER 2006						H	NF-N-50	(w -1		Ice	Chest No.	ROS	5 Te	mp.		
Shinned To (Lab)		atronnous tra					Method of	Shipment			Bill	of Lading/A	······································			*****	
Severn Tre Protocol CERCLA	ent Incom	oorated_Ric	hland		SCHOOLS	to react sections		Govt. Ve		ority: 45 Days		Offs	site Property	No.			-	
POSSIBLE S ** ** Conta releasable per D	ins Radioa	ctive Materia	l at coi	ncentrations th	nat are 1	not regulat	ed for transp	ortation per 49	CFR but are not	closure of 14 days	VSCF: Batch all PNNL		omitted under A	, G, I, S, aı	otal Activity Ind W 07 SAFs	Exemption into one SDC	Yes . Yes .	No Led SDG
Sample 1	No.	Lab ID	*	Date		Time	No/Type	Container		400	Sample Analys	is				Pr	eservative	
B1L2C3			W	4.5-0	60	85-4	1x20-ml		Activity Scan					None				
B1L2C3			W	· ·		1	2x4000-	mL G/P	I129LL_SEP_LEF	'S_GS_LL: I-129	(1)			None				
B1L2C3			W	The state of			1x500-n	ıL P	TC99_ETVDSK_L	_SC: Tc-99 (1)				HCl to p	H <2			
B1L2C3			W	1			3x1000-	mL G/P	SRISO_SEP_PRI	ECIP_GPC: Sr-9	0 (1)			HNO3 t	o pH <2			
											<i>エ</i> K3ん	18						
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Relinquished		#-E						Time	Received By	Wh Ve	one ru	レレレ	Date/Time		S = Soil SE = Sedi SO = Solic SI = Slud W = Wat	ment 1 ge	DI. = 1 T = 7 WI = 7	Drum Solid Drum Lian Tissue Wine
Relinquished	Ву						Date	Time	Received By				Date/Time		W = Wat $O = Oil$ $A = Air$	er	V = '	Liauid Vegetation Other

FINAL SAMPLE Disposal Method (e.g., Return to customer, per lab procedure, used in process)

DISPOSITION

Date/Time

Received By

Relinquished By

Disposed By

Date/Time

Date/Time

PNNL	UGL080147
	W05076
	Due 1-19.07

CHAIN OF CHETODY/CAMDLE ANALYSIS DEOLIGE

C.O.C.#

T07-010-66

	W0501	76	. 67		СПАІ	NOF	COSTODIA	SAMPLE ANALY	SIS REQUES			107 010 00
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	T. SICKLE					Contact/Re Dot Stew			Telephone No. 509-376-5056	MSI	N FA	X
AF No.						Sampling (Origin		Purchase Orde			
I07-010 roject Title			***************************************			Hanford		· •	Ice Chest No.		Temp.	
2ZP1-LOL NOV	EMBER 2006						NF-N-500	o~ /		R055	r chip.	
hinned To (Lab) Severn Trent Inc	ornorated Ric	hland				Method of Govt. Ve			Bill of Lading/A	Air Bill No.		
rotocol		dalah bilah bilah ba				OUTL. FC		ority: 45 Days	Offsite Propert	y No.		
CERCLA POSSIBLE SAMP ** ** Contains Rac eleasable per DOE Or	lioactive Materia	al at cor	ncentrations that	are not regula	ated for transp	L ortation per 49		SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PN closure of 14 days. WSCF: Batch all PNNL GW sample		A, G, I, S, and W 07	tivity Exemptic SAFs into one S	on: Yes V No DG, not to exceed SDG
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample Ana	lysis			Preservative
B1L294		W	12-5-06	1028	1x20-mL	. P	Activity Scan		M30, 2004	None		
B1L294		W	1	١	2×4000-	mL G/P	I129LL_SEP_LE	PS_GS_LL: I-129 (1)		None		
B1L294		W			1x500-m	L P	TC99_ETVDSK_	LSC: Tc-99 (1)		HCl to pH <2		
B1L294		W	1		3×1000-	mL G/P	SRISO_SEP_PR	ECIP_GPC: Sr-90 (1)		HNO3 to pH <	2	***************************************
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Relinquished By	Print	-	Sign		Date	Time Time	Received By	Print Sign	Doto/Time	14:20		, · •
Relinquished By Ha R. T. SIC	nford		/Sign	D	EC 0 5	200E	1 1 1:		DEC 0 5 2	1		trix *
Relinquished By						Time	Received By	u J. On My	Date/Time	SE SO SL	= Soil = Sediment = Solid = Sludge	DS = Drum Solid DI = Drum Liqui T = Tissue WI = Wine
Relinquished By					Date/	Time	Received By	and a second	Date/Time	0	= Water = Oil = Air	L = Liquid V = Vegetation X = Other
Relinquished By					Date/	Time	Received By	- Marian	Date/Time			
FINAL SAMPL DISPOSITION		Method	l (e.g., Return to	customer, pe	r lab procedur	e, used in proc	ess)	Disposed By			Date/Ti	me



Sample Check-in List

	armin .	12.5.06 1420		
Clien	" Tow	SDG#: W050	76 NA[] SAF #	1: 107-010 NA[]
Work	Order Number:	62080147	Chain of Custody # Z	07-010-66, 96, 74, 58
Shipp	ing Container ID $oldsymbol{arrho}$		sir Bill # 1/19	
1.	Custody Seals o	n shipping container intact?	N	A[] Yes[] No[]
2.	Custody Seals d	ated and signed?		A[] Yes[/ No[]
3.	Chain of Custod	ly record present?		Yes No[]
4.	Cooler températ	ure:NA // 5.Ve	rmiculite/packing mat	erials is NA [] Wet [] Dry []
6.	Number of samp	oles in shipping container:	and the same of th	, , , , , , , , , , , , , , , , , , , ,
7.	Sample holding	times exceeded?	. N.	A [] Yes[] No[]
8,	Samples have:tapecustody se	eals.	hazard	
9,	Samples are:in good cobroken	ondition	leaking have air (Only for sam	bubbles bles requiring head space)
10.	Sample pH taker	n? NA[] pH<2[Y pH>2 // pH>	9[]
11.		n, Sample Collector Listed? * tion only. No corrective action	n needed.	Yes / No[]
12.	Were any anoma	ilies identified in sample receip	ot?	Yes [] NoX]
13.	Description of an	nomalies (include sample num	bers): <u>N/A</u>	
Sample	e Custodian:	S. Smith	Date: 12-5-	06 1420
CI	ient Sample ID	Analysis Requested	Condition	Comments/Action
Client L	nformed on	by	Person contacted	
	action necessary; pr		,	
Project	Manager		Date	
LS-023.	, 9/03, Rev. 5			

PNNI	6L110136 W05076
X I VI VO	W05076
	Aug 01-19-0 Fluor Hanford
Collector	Fluor Hanford

C.O.C.#

TA7 AAA Q5

1	WO 507	16			CHAIN	OF C	CUSTODY	/SAMPLE ANALYSIS	REQUEST		10/-009-8
di	10 01-19 Fluor Hanford	06	,								Page <u>1</u> of <u>1</u>
ollector	Fluor Hanford R. T. SICKLE	·			I	ntact/Req Oot Stewa			Telephone No. 509-376-5056	MSIN	FAX
AF No. I07-009					San	npling Or Hanford Si	igin		Purchase Order/	Charge Code	<u> </u>
roject Title	VIEW (DED 2000)						1F-N-50	6-1	Ice Chest No. Z	-051	Temp.
2UP1-LOL NO hinned To (Lah					Mei	thod of S			Bill of Lading/Ai		***************************************
Severn Trent Ir	cornorated Ric	hland				Govt. Vehi			Official December	N1 -	***
rotocol SURV							Pr	iority: 45 Days	Offsite Property		
** ** Contains R eleasable per DOE (adioactive Materia	l at cor	ncentrations that	are not regula	ted for transportati	ion per 49 C	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNNL sc closure of 14 days. WSCF: Batch all PNNL GW samples subr	•	G, I, S, and W 07 S.	vity Exemption: Yes 🗹 No AFs into one SDG, not to exceed SD
Sample No.	Lab ID	*	Date	Time	No/Type Cor	ntainer		Sample Analysis			Preservative
B1L216		W	12-50-00	1713	1x20-mL P		Activity Scan			None	<u></u>
B1L216		W	1	1	2x4000-mL	G/P	I129LL_SEP_LE	PS_GS_LL: I-129 (1)		None	
B1L216		W	1	-6	1x500-mL F	>	TC99_ETVDSK	LSC: Tc-99 (1)		HCl to pH <2	
			·								
		<u> </u>						JK70+	·		****
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		-		<u> </u>						***************************************	
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Datin and Lad Day	D-:		Sign		Date/Time		7) Received By ()	A Drint Sign	Data/Firms	00	Matrix *
Relinquished By Fluor Hanfor R. T. SICKLE	rd Print		Sign			8 8 8 3	-Os	Som Yh	DEC 0.3	2006 s =	Soil DS = Drum
Relinquished By			***************************************		Date/Time		Received By		Date/Time	SF. = SO = SI. =	Sediment DI. = Drim Solid T = Tissue Sludge WI = Wine Water I. = Liquid
Relinquished By					Date/Time	e)	Received By		Date/Time	0 =	$\begin{array}{cccc} \text{Oil} & V & = & \text{Vegets} \\ \text{Air} & X & = & \text{Other} \end{array}$
Relinquished By					Date/Time	e I	Received By		Date/Time	L	**************************************
FINAL SAMP	1 -	Method	l (e.g., Return to	o customer, per	r lab procedure, use	ed in proces	ss)	Disposed By			Date/Time



Sample Check-in List

Date/T	ime Received: 12-04	, 66 1500	>		
Client:	Pow	SDG#: WO	5076 NA[]	SAF #: Z	07-009 NA[]
	Order Number: <u>UGL 110</u>				-009-85
	ng Container ID: ROSS		Air Bill # <i>\(\text{\text{\$\exit{\$\text{\$\exit{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\exit{\$\text{\$\titt{\$\text{\$\exititt{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\text{\$\}}}}\$}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}}</i>	11)	
1.	Custody Seals on shippin	g container intact	?	NA[]	Yes [/ No []
2,	Custody Seals dated and	signed?		NA[]	Yes [/ No []
3.	Chain of Custody record	present?		•	Yes / No []
4.	Cooler température:	NA_// 5	.Vermiculite/pac	king materials	is NA 💋 Wet [] Dry
6.	Number of samples in shi				
7.	Sample holding times exc	ceeded?		NA []	Yes[] No[]
8.	Samples have:tapecustody seals			hazard labels appropriate s	
9.	Samples are:in good conditionbroken		***************************************	leaking have air bubb	
10.	Sample pH taken?	NA[] pH	<2//> 7 pH>2//	pH>9[]	
11.	Sample Location, Sample *For documentation only.				Yes [] No []
12.	Were any anomalies ident	ified in sample re	eceipt?		Yes[] No []
13.	Description of anomalies	(include sample r	numbers): _/Y /	<u> </u>	and the state of t
		9			
Sample	Custodian:	Smith	Date:	12.60	6 1500
Cli	ent Sample ID Ana	lysis Requested	Condi	ion	Comments/Action
					-
Client Ir	nformed on	_by	Person	contacted	1
] No	action necessary; process as is	S .			
roject i	Manager		Date	ما المراجعة	

PNNLUG L110147 W05076
W05076
Due 01.19.07

C.O.C. #

W07-011-378 CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST Page 1 of <u>1</u> Collector FI LIOR HANFORD Contact/Requester Telephone No. MSIN FAX Dot Stewart MR WELL 509-376-5056 SAF No. Sampling Origin Purchase Order/Charge Code W07-011 Hanford Site Ice Chest No. Project Title Temp. RCRA, NOVEMBER 2006 Shinned To (Lab) Method of Shipment Bill of Lading/Air Bill No. Severn Trent Incorporated, Richland Govt. Vehicle Protocol Offsite Property No. Priority: 45 Days RCRA POSSIBLE SAMPLE HAZARDS/REMARKS SPECIAL INSTRUCTIONS Total Activity Exemption: Yes V No **Hold Time** ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not All Labs except WSCF: Batch all PNNL samples submitted under A. G. I. S. and W 07 SAFs into one SDG, not to exceed SDG releasable per DOE Order 5400.5 (1990/1993) closure of 14 days. WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure. Sample No. Lab ID Date Time No/Type Container Sample Analysis Preservative B1L600 W 1x20-mL P Activity Scan None 2-6-6 W B1L600 1x500-mL P TC99 ETVDSK LSC: Tc-99 (1) HCl to pH <2 B1L600 W 906.0 H3 LSC: Tritium (1) 1x1000-mL P None Relinaviched RUANEORO Motriy *

Tremple Political Control	THE TIME Sign) Date/Time	Accelerated by	Juni Sign	Date/Time		Mauix
M.R. WEIL	Jupui.	DEC 0 6 2006	S. Smith	J. Smith	DEC 0 6 2006	S = 50n	DS = Drum Solid
Relinquished By		Date/Time	Received By		Date/Time	SE = Sedimen SO = Solid	T = Tissue
					1	SI. = Sludge W = Water	WI = Wine L = Liquid
Relinquished By		Date/Time	Received By		Date/Time	O = Oil A = Air	V = Vegetation X = Other
Relinquished By		Date/Time	Received By		Date/Time		
FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to custome	r, per lab procedure, used in proce	ess) ·	Disposed By		D	ate/Time

PNNL UG L 110147 WOSD76
due 01.19.07

CHAIN OF CHETODY/SAMDLE ANALYSIS DECLIEST

C.O.C.# W07-011-432

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	01.19.		4		-						Page	<u>1</u> of <u>1</u>		
Collector	LUOR HANI M.R. WE					Contact/Re Dot Stew			Telephone No. 509-376-5056	MSI	IN FAX			
AF No. W07-011			***************************************			Sampling C Hanford S)rigin			Purchase Order/Charge Code				
roject Title								<i>L 1</i>	Ice Chest No.	Ann C	Temp.			
RCRA, NOVEMB	BER 2006					Method of	- <i>N</i> - 506 Shinment	4	Bill of Lading/Ai		111			
Severn Trent Incom	rporated_Ricl	nland_				Govt. Ve				******	· · · · · · · · · · · · · · · · · · ·			
rotocol RCRA							Pric	ority: 45 Days	Offsite Property					
** ** Contains Radio	oactive Material	at conc		are not regulat	ed for transpo	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNNI closure of 14 days. WSCF: Batch all PNNL GW samples so	•	G, I, S, and W 07	ctivity Exemption 7 SAFs into one SDO	: Yes V No 3, not to exceed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sample Analys	sis		Pr	eservative		
B1L650		_	12-5-06	1150	1x20-mL		Activity Scan			None				
B1L650	***************************************	W	approximate the second	in the same of the	1x500-m		TC99_ETVDSK_L			HCl to pH <2				
B1L650		W	and the second s		1x1000-ı		906.0_H3_LSC: T			None				
B1L650		W		4	1x1000-i	mL P	9310_ALPHABET	A_GPC: Alpha + Beta (2)		HNO3 to pH <	2			
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							12-5	- 056		V				
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Relinquished PIANFO	ORD Print		Sign	-/	Date/	Time	Received By	Sprint Sign	Date/Time		Matr	ix *		
Relinquished By	- Ul		Me		Date/	J O ZUUL Time	Received By		DEC 0 6 1	SO SL	= Soil = Sediment = Solid = Sludge = Water	DS = Drum Solid DL = Drum Liqui T = Tissue WI = Wine L = Liquid		
Relinquished By					Date/	Time	Received By		Date/Time	0	= Oil = Air	V = Vegetation X = Other		
Relinquished By					Date/	Time	Received By	4 Manual 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 1991 - 199	Date/Time					
							1							

STL

Date/Ti	me Received: /s	0.06.06 1500			
Client:_	POW	SDG #: WOS	7076 NA[]	SAF #: W07-011 NA []
Work C	order Number: U	02110147	Chain of Custod	dy # 007-011-432,37	8
		RP-06-00Z	Air Bill #	U/A	
1.	Custody Seals or	n shipping container intac	t?	NA[] Yes [] No[]	
2.	Custody Seals da	ated and signed?		NA[] Yes [/] No[]	
3.	Chain of Custod	y record present?		Yes [/ No[]	
4.	Cooler températi	ure:NA [/	5.Vermiculite/packi	ing materials is NA [/] Wet [] [) Pry []
6.	Number of samp	les in shipping container:	Á	- The state of the	
7.	Sample holding	times exceeded?		NA [/ Yes [] No []	
8.	Samples have:tapecustody se	als .		nazard labels appropriate samples labels	
9.	Samples are:in good cobroken	ndition		eaking nave air bubbles or samples requiring head space)
10.	Sample pH taker	? NA[] pH	<2 [/ pH>2 [/	pH>9 []	
11.		, Sample Collector Listed ion only. No corrective a		Yes // No[]	
12.	Were any anoma	lies identified in sample i	eceipt?	? Yes [] No [/	
13.	Description of an	omalies (include sample	numbers): <u>COC</u> *	W07-011-432	Carrier specificação s
<u> </u>	mple # BI	1650 Reads mped 12-6-0	Sample c	date 12-5-06. Th	L.
	Custodian:	S. Smith		12-06-06 1500	- Arrest Market Control
Clie	nt Sample ID	Analysis Requested	Conditio	on Comments/Actio	П
Client Int	formed on 12 13 10	06 by S. Seger	Person co	contacted Dot Stewart	
	iction necessary; Pr	\mathcal{O}		The second secon	**************************************
Project M	X	uda Segu	Date	12/13/06	
LS-023. 9	0/03, Rev. 5				

Seger, Sandra

From:

Seger, Sandra

Sent:

Wednesday, December 13, 2006 7:46 AM

To:

'Stewart, Dorothy L'

Cc:

Felmy, Diana; 'Waters-Husted, Karen S'

Subject:

W05072 & W05076 COCs / Anomalies noted on COC W07-011-432

Attachments:

W05072.PDF; W05076.PDF





W05072.PDF (107 KB) W05076.PDF (1 MB)

Please note the anomalies on the sample check in list for COC W07-011-432.

Thanks, Sandra

PNNL	U6 L 110151 W0 5076
	Due 01.22.07

C.O.C. #

T07_011_116

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d	we 01.2	2.0									Page <u>1</u> of	1
	JOR HANFOF M.R. WEIL	ID				Contact/Re			Telephone No. 509-376-5056	MSIN	FAX	
AF No.						Sampling (Origin		Purchase Order		***************************************	
107-011 roiect Title					***************************************	Hanford	Site ド・ル・50	t- 11	Ice Chest No.	21 14	Temp.	
ISRM-LOI, NO'		6			***************************************	Method of			SML-			
Severn Trent Inc		hland				Govt. Ve		The same of the sa	bin of Laung/A	MI DIM NO.		
rotocol _CERCLA							Pri	ority: 45 Days	Offsite Property	v No.		
** ** Contains Ra eleasable per DOE O	dioactive Materi	al at cor	centrations that	are not regulat	ted for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all F closure of 14 days. WSCF: Batch all PNNL GW samp	-	A, G, I, S, and W 07 SA	vity Exemption: Yes AFs into one SDG, not to ex	No xceed SDG
Sample No.	Lab ID	*	Date	Time		Container		Sample Ar	nalysis		Preservativ	re
B1L2X1		W	12-7-06	1038	1x20-ml		Activity Scan			None		
B1L2X1		W	-	<u></u>	1x500-m	L G/P	UTOT_KPA: Ura	nium (1)		HNO3 to pH <2		
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		1						2-7-06	÷			
		 										
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Relinquished By FLUOR HA M.R. W	NFORD Print	<u> </u>	Sign Sign	2	UEL Date	Time 2006	Received By	Print Sign Sign	DEC Date/Time	2006	Matrix *	
Relinquished By	2 magaz				Date/	Time	Received By	Stomics	Date/Time	SE = SO = SL =	Sediment DL = Solid T = Sludge WI =	 Drum Soli Drum Liou Tissue Wine Liquid
Relinquished By					Date/	Time	Received By		Date/Time	0 =	Oil V =	= Vegetation = Other
Relinquished By				· wa wax	Date/	Time	Received By	-	Date/Time			
FINAL SAMPI	F Dienoeal	Method	(e.g., Return to	customer per	lah procedur	e used in proc	esa)	Disposed By			Date/Time	
DISPOSITION			(- <i>D</i> -,	por	P	-, p. p.	/	2 Mp 000 d Dy			2000 1 1110	

PNNL UG	11015	5/		(CHAI	N OF (CUSTODY	V/S	AMPLE ANA	i vete i	FOIIFST	1	C.O.C		011-117
d	ne 01.2	2.6	16 07 55			I OF		115	ANTI LLE ANTA		œQUEST		-	Page 1	of <u>1</u>
Collector Fl	UOR HANFO M.R. WEIL	RD				Contact/Re					Telephone No.		MSIN	FAX	
SAF No.	SAS-2 2º A S green grame					Dot Stew Sampling O						Charge	^ode		
I07-011			***************************************			Hanford S									
Project Title ISRM-LOL NOV	VEMBER 2006	5				HN	F-N-5	0	64		Ice Chest No.	562	Ten	np.	
Shinned To (Lah) Severn Trent Inc		hlond	***************************************	Contraction and the Contraction	u come	Method of S Govt. Vel	Shipment				Bill of Lading/A				
Protocol	CHIRDAULI CK	manu			**************************************	COVI. VE		Priori	ty: 45 Days		Offsite Property	No.			
CERCLA POSSIBLE SAMI ** ** Contains Ra releasable per DOE O	dioactive Materia	l at cor	ncentrations that	are not regulat	ed for transpo	ortation per 49		S	PECIAL INSTRUCTION All Labs except WSCF: Batch closure of 14 days. WSCF: Batch all PNNL GW	h all PNNL samp		G, I, S, ar	otal Activity E d W 07 SAFs in	xemption: Y	es V No to exceed SDG
Sample No.	Lab ID	*	Date	Time	No/Type	Container			Sampl	le Analysis		WIIII.	· · · · · · · · · · · · · · · · · · ·	Preserv	vative
B1L2X2		W	12-7-06	1038	1x20-mL		Activity Scan		-			None			
B1L2X2		W	ــــــــــــــــــــــــــــــــــــــ	J	1x500-m	L G/P	UTOT_KPA: U	Iraniu	m (1)			HNO3 to	pH <2		
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Relinquished BANF FLUOR HANF M.R. WE	ORD Print		Sign (DEC Date	7 2006	Received By	n S	L S. Sv. Sign		DEC 0 7 2		S = Soil	Matrix *	
Relinquished By					Date/		Received By				Date/Time		SE = Sedim SO = Solid SL = Sludø W = Water	T e W r L	= Tissue I = Wine = Liquid
Relinquished By					Date/	1 ине	Received By				Date/Time		O = Oil A = Air	v x	
Relinquished By					Date/	Time	Received By				Date/Time	<u> </u>			
FINAL SAMPL DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedure	e, used in proce	ess)		Disposed I	Ву				Date/Time	

PNNL J6	005076
	01.22.07

C.O.C.#

107_011_66

	10000		,		CHAI	A OF (CUSTODY	/SAMPLE ANAI	TASI2 KEGUE2	ľ		10/-011-00		
dhe	201.22	·07									Page	<u>1</u> of <u>1</u>		
Collector FLU	I OR HANFOR M.R. WEIL				C	Contact/Re			Telephone No. 509-376-505		IN FA	X		
AF No. 107-011					s	ampling (Hanford	Drigin		Purchase Orde	Purchase Order/Charge Code				
roject Title ISRM-LOL NO	VEMBER 200	6					G - N - 5	506 4	Ice Chest No.	Ice Chest No. SmL 562 Temp.				
hinned To (Lab Severn Trent In		HANNEN TO STREET STREET	KANGER SERVER		N	Aethod of Govt. Ve	Shipment		Bill of Lading/					
rotocol CERCLA					-	OVII. IC		iority: 45 Days	Offsite Proper	tv No.				
POSSIBLE SAM ** ** Contains R eleasable per DOE (adioactive Materi	al at co	ncentrations that	are not regular	ted for transpor	tation per 49	CFR but are not	closure of 14 days.	S Hold Time all PNNL samples submitted under amples submitted into one SDG, da	A, G, I, S, and W 0		on: Yes V No DG, not to exceed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type (Sample	Analysis		· I	Preservative		
B1L2R2		W	12-7.00	0914	1x20-mL		Activity Scan			None	W/····			
B1L2R2		W	4	1	1x500-mL	. G/P	UTOT_KPA: Ura	anium (1)		HNO3 to pH	:2	weeke consumer		
· · · · · · · · · · · · · · · · · · ·		-			<u> </u>					,				
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		- 					10-	-1-26				***************************************		
Polinguished Py	Prin	+	Sign		Date/T		Received By	Print Sig	n Date/Tim	1415	Ma	trix *		
Relinquished By FLUOR HAN M.R. W	4FORD '`''' EIL :/√√	\cap	Q 1 20		DEC 0			4 < 6 1/2	DEC O	7 2006				
Relinquished By	<u> </u>	*			Date/T		Received By	J. J. Mil. Of	Date/Tim	e SE SO	= Soil = Sediment = Solid = Sludge = Water	DS = Drum Soli DL = Drum Lion T = Tissue WI = Wine L = Liouid		
Relinquished By					Date/T	ime	Received By		Date/Tim		= Oil = Air	V = Vegetation X = Other		
Relinquished By					Date/T	ime	Received By		Date/Tim	e				

FINAL SAMP		Metho	d (e.g., Return to	o customer, per	r lab procedure,	used in proc	cess)	Disposed B	у		Date/Tir	ne		



Date/T	ime Received:	2-07-06 141	75	
Client:	Pow	SDG #: <i>W03</i>	076 NA[] S	AF#: <u>F07-011</u> NA[]
				107-011-66,117,11
Shippi	ng Container ID: <u></u>	m L-562	Air Bill # <u>W/A</u>	
1.	Custody Seals on	shipping container intac		NA[] Yes[] No[]
2.	Custody Seals da	red and signed?		NA[] Yes // No[]
3.	Chain of Custody	record present?		Yes [] No []
4.	Cooler temperatu	re:NAIX S	Vermiculite/packing	materials is NA 🕢 Wet [] Dry []
6.	Number of sampl	es in shipping container:		
7.	Sample holding ti	mes exceeded?		NA[YYes[] No[]
8.	Samples have:		v	,
	tape custody sea	ls .	haz. app	ard labels ropriate samples labels
9.	Samples are:			·
	in good con broken	dition	leak hav	ting 8 air bubbles
			(Only for	samples requiring head space)
10.	Sample pH taken?	' NA[] pH	<2]/ pH>2[]	pH>9[]
11.	Sample Location, *For documentation	Sample Collector Listed on only. No corrective a	? * ction needed.	Yes [] No []
12.	Were any anomali	es identified in sample re	eceipt?	Yes[] No[]
13.	Description of and	omalies (include sample r	numbers): 10/10	
	, , , , , , , , , , , , , , , , , , ,			and the state of t
Sample	Custodian:	L. Smith	Date: /o	2.7.06 14:15
Cli	ent Sample ID	Analysis Requested	Condition	Comments/Action
T The Street of				
Client In	formed on	by	Person cont	acted
[] No	action necessary; pro	cess as is.		
Project A	Manager		Date	
LS-023,	9/03, Rev. 5			

PNNI 6 L due a	11015	4			CHAIN	OF (CUSTODY/	SAMPLE ANAI	LYSIS R	EQUEST			S07-01	
Collector	O HARDIN				Co	ontact/Re	quester			Telephone No.	 MSIN	Page FA		
H.	T. SICKLE					Dot Stew				509-376-5056				
SAF No. S07-011						mpling O Hanford S			ļ.	Purchase Order/	Charge Code			
Proiect Title	IDED 2006	<u> </u>					INF-N-500	e - 5		Ice Chest No. 5	ML 24	Temp.		
SURV. NOVEM Shinned To (Lab)		NO 000 NO 00			м	ethod of S	?			Bill of Lading/Ai				
Severn Trent Inc Protocol	corporated Ric	hland				Govt. Vel				Offsite Property	No.			
SURV			,				Prid	ority: 45 Days						
** ** Contains Rac releasable per DOE On	dioactive Materia	ıl at cor	centrations that	are not regular	ted for transporta	ation per 49	CFR but are not	SPECIAL INSTRUCTION All Labs except WSCF: Batch closure of 14 days. WSCF: Batch all PNNL GW se	all PNNL sample	s submitted under A,	G, I, S, and W 07 S	vity Exemptic AFs into one S		
Sample No.	Lab ID	*	Date	Time	No/Type Co	ontainer		Sample	e Analysis				Preservative	
B1L3D3		W	Q-7-36	1141	1x20-mL F	5	Activity Scan				None			
B1L3D3		W	T.	4	3x1000-mL	_ G/P	SRISO_SEP_PR	ECIP_GPC: Sr-90 (1)			HNO3 to pH <2			
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		1			 		V-1////							
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		<u> </u>			1		1							-
Relind ikter Hanf o R. T. SICKL	ord Prim		Ngn	DI	Date/Tin		Received By Sm	th S. Sm. W	in .	Date/Time/	·	Ma	ntrix *	Drum Solid
Relinquished By	1-6	and the second			Date/Tim		Received By	- (J.11) TV		Date/Time	SF = SO = SL =	Sediment Solid Sludge Water	DI. = T = WI =	Drum Liqui Tissue Wine Liquid
Relinquished By					Date/Tin	ne	Received By			Date/Time	0 =	Oil Air	V =	Vegetation Other
Relinquished By					Date/Tin	ne	Received By			Date/Time				

Disposed By

Date/Time

FINAL SAMPLE DISPOSITION

Disposal Method (e.g., Return to customer, per lab procedure, used in process)



Date/T	ime Received: 13.07.06 145.		
Client:	Pow SDG#:W	05076 NA[] SAF#	507-011 NA[]
Work (Order Number 16 110 154	Chain of Custody #	807-011-84
Shippin	ng Container ID: <u>5mL24</u>	Air Bill # N/A	
1.	Custody Seals on shipping container in	ntact?	A[] Yes [] No[]
2.	Custody Seals dated and signed?	N.	4[] Yes [/ No[]
3.	Chain of Custody record present?		Yes 🕖 No []
4.	Cooler temperature:NA 🗸	5. Vermiculite/packing mate	erials is NA./) Wet[]Dry[]
6.	Number of samples in shipping contain	4	
7.	Sample holding times exceeded?		^ [∦ Yes[] No[]
8.	Samples have:tapecustody seals	hazard la	
9.	Samples are:in good conditionbroken	leaking have air (Only for samp	bubbles bles requiring head space)
10.	Sample pH taken? NA[]	pH<2[] pH>2[] pH>9	9()
11.	Sample Location, Sample Collector Lis*For documentation only. No corrective		Yes // No []
12.	Were any anomalies identified in samp	le receipt?	Yes[] No [/
13.	Description of anomalies (include samp	ole numbers): <i>NA</i>	
	ρ,		
Sample	Custodian: S. Smith	Date: 12.	7.06 1450
Clie	ent Sample ID Analysis Requeste	d Condition	Comments/Action
	nformed onby	Person contacted	
•	action necessary; process as is.	,	
	Manager	Date	
1.8-023	9/03 Rev. 5		

PNNL U6	W	0	0 5	1	グク	5	
49		.1	,				

C.O.C. #

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	W050	16			CHAIN OF	CUSTODY	SAMPLE ANALYS	IS REQUEST	507-012-1		
dhee	01-23	2.0	7						Page <u>1</u> of <u>1</u>		
21 /	uor Hanford				Contact/Re		The state of the s	Telephone No.	MSIN FAX		
	E. PARCHEI	4	N		Dot Stew Sampling (509-376-5056 Purchase Order/	Charge Code		
S07-012			w		Hanford	Site					
o <mark>iect Title</mark> SURV. DECEME	BER 2006				jet so	- N-300	- 4	Ice Chest No.	F-1-36 Temp.		
inned To (Lab)		SOCIO CONTRACTO DE			Method of	Shipment		Bill of Lading/Air	r Bill No.		
Severn Trent Inco	ornorated. Ric	hland		Newson and the second second second	Govt. Ve			Offsite Property	No		
SURV						Pri	ority: 45 Days				
OSSIBLE SAMPI * ** Contains Radi casable per DOE Ord	ioactive Materia	l at con	centrations that	are not regula	ted for transportation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNN closure of 14 days. WSCF: Batch all PNNL GW samples s		Total Activity Exemption: Yes ✓ N G, I, S, and W 07 SAFs into one SDG, not to exceed closure.		
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Analys	sis	Preservative		
1LCV5		W	12.870	1018	1x20-mL P	Activity Scan			None		
31LCV5		W	4	V	1x1000-mL G/P	UISO_PLATE_A	EA: List-1 (3)		HNO3 to pH <2		
								(752)			
,									447		
							**************************************		·		
					.616	150			218		
Relinquished BY LUOI D. E. Relinquished By Relinquished By	r Hanford ^{rint} PARCHEN		Sign	O	Date/Time Date/Time Date/Time	Received By Received By	h Sign Sign	DEC 0 2006 Date/Time Date/Time	Matrix * S		
							THE SHAPE IN THE S				
Relinquished By					Date/Time	Received By		Date/Time			
						•					



		2.08.06 1245			
Client:	Pow	SDG #: W69	076 NA[]	SAF #: 507.	-012 NA[]
		66-110155			
		JF-1-36		0/19	
1.	Custody Seals o	n shipping container intac	t?	NA[] Yes	[] No[]
2.	Custody Seals d	ated and signed?		NA[] Yes	/
3.	Chain of Custod	y record present?		*	No[]
4.	Cooler temperat	ure:NA [/]	5. Vermiculite/packi		r
6.		oles in shipping container:			
7.	Sample holding	times exceeded?		NA () Yes	[] No[]
8.	Samples have:tapecustody se	als .		azard labels ppropriate sampl	
9.	Samples are:fin good cobroken	ondition		eaking ave air bubbles or samples requir	ing head space)
10.	Sample pH taker	n? NA[] pH	<2[/ pH>2[]	pH>9[]	
11.		, Sample Collector Listed tion only. No corrective a		Ye	s[] No[]
12.	Were any anoma	lies identified in sample r	eceipt?	Ye.	s [] No/[]
13.	Description of ar	nomalies (include sample i	numbers):	/A	
Sample	Custodian: 10	h. Smith	Date:	12.08.06	12:45
Clie	ent Sample ID	Analysis Requested	Conditio	on	Comments/Action
Client In	formed on	by	Person c	ontacted	
	action necessary; pr			ŧ	and the second s
Project M	ſanager		Date		
LS-023,	9/03, Rev. 5				

PNNI	U6 L110156 W05076	-
	W05076 Due 01.22.07	
Collector	week 07 0.00 1	
SAF No.	T. SICKLE	

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

S07-012-196

u	1030	1 40			CHAI	NOL	COSTODIA	SHAILTE HI	HLISIST	Teanyan				
Due	01.22	.07	7									Page	<u>1</u> of <u>1</u>	
Collector						Contact/Re Dot Stew				Telephone No. 509-376-5056	MS	SIN FA	X	
SAF No. 7. SK S07-012	CKLE					Sampling C				Purchase Order/Charge Code				
Project Title						HAVE N-576-1			Ice Chest No. 2055 Temp:					
SURV, DECEME Shipped To (Lab)	BER 2006													
Severn Trent Inco	ornorated Ric	hland					Govt. Vehicle			Bill of Lading/Air Bill No.				
Protocol SURV							Pric	ority: 45 Days		Offsite Property	No.		•	
POSSIBLE SAMPI ** ** Contains Radi releasable per DOE Ord	ioactive Materia	l at cor	centrations that	are not regular	ted for transp	ortation per 49	CFR but are not	SPECIAL INSTRUC All Labs except WSCF: closure of 14 days. WSCF: Batch all PNNL	Batch all PNNL sampl		G, I, S, and W 0		on: Yes No DG, not to exceed SDC	
Sample No.	Lab ID	*	Date	Time	No/Type	Container		Sa	ample Analysis				Preservative	
B1LCN9		W	12806	1051	1x20-mL	. P	Activity Scan				None		<u> </u>	
B1LCN9		W	e,come		1x1000-	mL G/P	UISO_PLATE_AE	EA: List-1 (3)			HNO3 to pH	<2		
B1LCN9		W	<i>V</i>	Ą	1x500-m	IL G/P	UTOT_KPA: Urar	nium (1)			HNO3 to pH	<2		
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			120				7-1-1						2	
Relinquished By	Print	7			DEC Date/	Time (3)	Received By	- I Print	7 Sign	Date/Time	35	Ma	ıtrix *	
Relinquished BOIC		14	[]				15. M	uh 2-8	mial	JEC 0 8 700	Îf s	= Soil	DS = Drum Se	
Relinquished B					Date/	Time	Received By			Date/Time	SO	SedimentSolid	DL = Drum L: T = Tissue	
											SL W	= Sludge = Water	WI = Wine I. = Liquid	
Relinquished By					Date/	Time	Received By			Date/Time	O A	= Oil = Air	V = Vegetati X = Other	
Relinquished By					Date/	Time	Received By			Date/Time				
											٠.			
FINAL SAMPLI		Method	l (e.g., Return to	customer, per	lab procedur	e, used in proc	ress)	Dispo	osed By	CONTRACTOR OF THE CONTRACTOR O	7,000	Date/Ti	me	

PNNLU6 L/10/56
W05076
Dun 11.22.07

PNNLUGA W Alue Collector	0507	56	7		CHAIN OF	CUSTODY/	SAMPLE ANALY	SIS REQUEST	1		7-012-188		
Collector F	Ul. Od				Contact/Re	an actor		Telephone No.	1.600		<u>1</u> of <u>1</u>		
	uor Hanford M. HALL				Dot Stev			509-376-5056	MSIN	FAX	•		
SAF No. S07-012	this is an engineer				Sampling (Purchase Order	/Charge Code				
Project Title					Hanford		o ^9	Ice Chest No.		Temp.			
SURV. DECEMI	BER 2006					1F-N-50	(e s	Ice Chest No.					
Shinned To (Lab) Severn Trent Inc.	ornorated Ric	bland	ACTION CONTRACTOR AND CONTRACTOR		Method of Govt. Ve			Bill of Lading/A	ir Bill No.				
Protocol	istaturus estat ekiteksisi kiloksi emplesi, adallu	shakaki indoheka ka			WYL. Y		ority: 45 Days	Offsite Property	No.				
SURV POSSIBLE SAMP ** ** Contains Rad releasable per DOE Or	lioactive Materia	l at cor	ncentrations that	are not regulate	ed for transportation per 49		SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PN closure of 14 days. WSCF: Batch all PNNL GW sample		, G, I, S, and W 07 S.	vity Exemption AFs into one SDC	: Yes V No G, not to exceed SDG		
Sample No.	Lab ID	*	Date	Time	No/Type Container		Sample Ana	ılvsis		Pr	eservative		
B1LCP4		W	12-8-06			Activity Scan			None		osci vative		
B1LCP4		w	I	1	1x500-mL G/P	UTOT_KPA: Urar	nium (1)		HNO3 to pH <2				
		†	¥	3				······································	<u>'</u>	***************************************			
		†					VA	. , t					
		 					JK76				***************************************		
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	<u> 1</u>	1		<u> </u>			The state of the s	Marine Control of the	<u> </u>				
Relinquished By FIGOT HE E M HA Relinquished By	Print MLL	L	Sign	AL	Date/Time 35 Date/Time 35	Received By	th S. Smill	DEC 0 8 2	2006 S = SE =		DS = Drim Solid DL = Drim Liqui		
		-							SI. =	Solid Sludge	T = Tissue WI = Wine		
Relinquished By			· · · · · · · · · · · · · · · · · · ·		Date/Time	Received By		Date/Time	0 =	Water Oil Air	I. = Liquid V = Vegetation X = Other		
Relinquished By	***************************************				Date/Time	Received By		Date/Time			***************************************		
FINAL SAMPL DISPOSITION	- .	Method	l (e.g., Return to	customer, per l	lab procedure, used in proc	ess)	Disposed By			Date/Time			

PNNEUL K 110156 WO 5076	
Due 01.22.07	

CHAIN OF CHETODY/CAMDIF ANALYSIS DEOLIEST

C.O.C.# 807-012-204

	0000	•			CHAI	NOP	COSTODIA	SAMELE ANALI	Cauyan Cic	1	807 OX			
du	e 01.22	.0%	7								Page <u>1</u> of	1		
Collector F	luor Hanford					Contact/Re Dot Stew			Telephone No. 509-376-505	MSII	N FAX			
SAF No. S07-012	6 8008 8 Ib 60000					Sampling C Hanford)rigin			Purchase Order/Charge Code				
Project Title SURV, DECE	MBER 2006		-				INF -N-	506 3	Ice Chest No.					
Shinned To (Lal		bland		**************************************		Method of S Govt. Ve	Shipment		Bill of Lading/	Bill of Lading/Air Bill No.				
Protocol SURV				periologica experience de la companience del la companience de la companience del la companience de la	DESPRESSION OF THE PROPERTY OF					tv No.				
POSSIBLE SAM ** ** Contains I releasable per DOE	Radioactive Materia	l at cor	ncentrations that a	are not regular	ted for transpo	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all I closure of 14 days. WSCF: Batch all PNNL GW samp		A, G, I, S, and W 07 S	ivity Exemption: Yes SAFs into one SDG, not to exce	No Leed SDG		
Sample No.	Lab ID	*	Date	Time		Container		Sample Ar	nalysis		Preservative			
B1LCN4		W	12-8-06	1211	1x20-mL	. P	Activity Scan			None				
B1LCN4		W	4	V	1x500-m	L G/P	UTOT_KPA: Uran	nium (1)		HNO3 to pH <2	2			
Relinquished By	Print		Sign		Date	8 8 8 B B B	Received By	Print Sign	Date/Tim	37-	Matrix *			
Relinquished By Relinquished By	lanford C	2			DEC 0 Date/	Time	Received By	th S. Smilly	DEC 0 8 2 Date/Time	SE = SO = SI = W =	Sediment DL = I	Drum Solid Drum Liaui Tissue Wine Liauid Vegetation		
				<u>.</u>								Other		
Relinquished By					Date/	Time	Received By		Date/Time	9				
FINAL SAMI DISPOSITION		Method	d (e.g., Return to o	customer, per	lab procedure	e, used in proce	ess)	Disposed By	**************************************		Date/Time			

PNNNJG	L110156
. I \ I \ X I	W05076
Due	01.22.07

C.O.C.#

\$07-012-212

	NO 50	76			CHAI	IN UF	COSTONX	SAMPLE ANALYS	12 KEQUEST			07-012-2	
Due	WO50.	.07	7				· 				Page	<u>1</u> of <u>1</u>	
Collector , SICK	72					Contact/Re			Telephone No. 509-376-5056	MSI	IN FA	X	
SAF No. S07-012						Sampling C	Origin		······	Purchase Order/Charge Code			
Project Title SURV, DECEMI	BER 2006					1	F-N-578/		Ice Chest No. 20.	<u> </u>	Temp.		
Shinned To (Lah) Severn Trent Inco		-bland		ERCENTERSON STREET, VOLUME STREET, STR	DANSEL DE LA CONTRACTOR	Method of	Shipment	- Miles	Bill of Lading/Ai				
Protocol SURV	OTDOTALEU. KA	'mixim			pales to enteres and enteres a	Govt. Ve		ority: 45 Days	Offsite Property	No.			
POSSIBLE SAMP: ** ** Contains Rad releasable per DOE Ord	dioactive Materia	ial at con	ncentrations that	rare not regular	ted for transp	ortation per 49		SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all PNN closure of 14 days. WSCF: Batch all PNNL GW samples s	(6)	, G, I, S, and W 07	ctivity Exemptio SAFs into one SI	n: Yes N	o SDG
Sample No.	Lab ID	*	Date	Time		e Container		Sample Analy	ysis		J	Preservative	
B1LCM9		W	12-8-06	1323	1x20-mL		Activity Scan			None			
B1LCM9		W	V		1x500-m	nL G/P	UTOT_KPA: Urar	nium (1)		HNO3 to pH <	2		
		+	<u> </u>	1	-	<u> </u>		***				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
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Relinquished By	e Print	2	Sign	- C	JEC Date	Time 7	Receifed By	Print Sign	Date/Time/	1		trix *	
Relinquished By		La				e/Time	Received By	h 2 smixn	DEC 0 8 2006 Date/Time	SE SO SL	= Soil = Sediment = Solid = Sludge = Water	DS = Dm DI = Dm T = Tiss WI = Wir I = Lian	nım Liaui ssue ine
Relinquished By					Date/	e/Time	Received By		Date/Time	0 :	= Oil = Air		egetation
Relinquished By					Date	e/Time	Received By		Date/Time			-	
FINAL SAMPLE	1	Method	d (e.g., Return to	o customer, per	r lab procedur	re, used in proc	ress)	Disposed By	***************************************		Date/Tin	ne	



Date/	Time Received:	12.8.06 1352							
Clien	Pow	SDG #: W05 7	76 NA[] SAF#:	507-012 NA()					
Work	Order Number 🖳	62110156	Chain of Custody # <i>So</i>	7-012-212, 204, 188, 19	74				
Shipp	ing Container ID		Air Bill # N/A						
1.	Custody Seals of	on shipping container intact?	NA	[] Yes [No []					
2.	Custody Seals of	dated and signed?		() Yes [No []					
3.	Chain of Custoo	dy record present?		Yes No[]					
4.	Cooler tempera	ture:NAJ/ 5.Ve	ermiculite/packing mater						
6.		ples in shipping container:	ph."						
7.	Sample holding	times exceeded?	NA.	✓ Yes[] No[]					
8,	Samples have:tapecustody s	eals .	hazard lab						
9.	Samples are:in good cobroken	ondition	leaking have air bi						
10.	Sample pH take	n? NA() pH<2	/ pH>2[] pH>9[]					
11.	Sample Location *For documenta	n, Sample Collector Listed? * tion only. No corrective actio	n needed.	Yes /] No []					
12.	Were any anoma	alies identified in sample recei	pt?	Yes[] No/]					
13.	Description of a	nomalies (include sample num	abers): <u>W/A</u>						
***************************************		1							
Sample	Custodian:	A. Smith	Date: 12.08	-06 1352					
C):	ient Sample ID	Analysis Requested	Condition	Comments/Action					
		by	Person contacted						
	action necessary; p		,						
			Date						
LS-023,	9/03, Rev. 5								

PNNL V 6 Collector Flu	L130	17.	5		CHAIN OF	F CUSTODY/	SAMPLE AI	NALYSIS I	REOUEST		C.O.C.#	807-012-324	
do.	0050	5.0	7								Page	<u>1</u> of <u>1</u>	
Collector Flu	or Hanford		/L			/Requester		Telephone No. MSIN FAX					
SAF No.	A HALL					tewart ng Origin			509-376-5056 Purchase Order/Charge Code				
S07-012	·					ord Site	***************************************						
Project Title SURV. DECEM	BER 2006				/	4NF-N-50	06 1		Ice Chest No. Ross Temp.				
Shinned To (Lah) Severn Trent Inc	CONTRACTOR OF THE PROPERTY OF	hland		SS (SATE SATE OF BOTH OF BOTH OF SATE SATE OF		of Shipment Vehicle			Bill of Lading/Ai	of Lading/Air Bill No.			
Protocol		-			omenous government government government		ority: 45 Days	Offsite Property No.					
SURV POSSIBLE SAMI ** ** Contains Ra releasable per DOE O	dioactive Materi	al at con	centrations that	are not regula	ted for transportation per		SPECIAL INSTRUC	Batch all PNNL sample		G, I, S, and W 07 S	ivity Exemp SAFs into one	tion: Yes V No SDG, not to exceed SDG	
Sample No.	Lab ID	*	Date	Time	No/Type Containe	er	***	Sample Analysis				Preservative	
B1LCL0		w	12-11-04	<u> </u>	1x20-mL P	Activity Scan		xy		None			
B1LCL0		W			1x1000-mL G/P	UISO_PLATE_AF	EA: List 1 (3)	12.4-06		HNO3 to pH <2	2		
B1LCL0		w	12-11-04	1219	1x500-mL G/P	UTOT_KPA: Urar	nium (1)	72-73-74-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7		HNO3 to pH <2	2		
·								JLDG.	4				
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		-	***************************************				MANAGEMENT MACINE MACIN						
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		-75											
Relinquished By Fluor Hanic F. M. HALL	Prin	<u>'</u>		full	DEC 1 1 2000		Print Print	Sign	DEC 1 1 20	06 s =	Soil	Matrix * DS = Drum Solid	
Relinquished By		<i>c</i> -	<i>i</i> –		Date/Time	Received By			Date/Time	SO = SL =	Sediment Solid Sludge Water	DL = Drum Liani T = Tissue WI = Wine L = Lianid	
Relinquished By					Date/Time	Received By			Date/Time	O =	Oîl Air	V = Vegetation X = Other	
Relinquished By					Date/Time	Received By	W(1)		Date/Time				
FINAL SAMPI DISPOSITION		Method	(e.g., Return to	customer, per	r lab procedure, used in p	process)	Disp	posed By			Date/	Time	

PNNLJ6	L130175
~ ~ ~	W05076
Λ	112- 55

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

S07-012-340

Due 01-25.0 1 of 1 Collector Contact/Requester Telephone No. MSIN FAX Fluor Hanford Dot Stewart 509-376-5056 F. M. HALL SAF No. Sampling Origin Purchase Order/Charge Code S07-012 Hanford Site **Project Title** Ice Chest No. Temp. HNF-N-506 SURV, DECEMBER 2006 Shinned To (Lab) Method of Shipment Bill of Lading/Air Bill No. Severn Trent Incorporated, Richland Govt. Vehicle Protocol Offsite Property No. Priority: 45 Days **SURV** POSSIBLE SAMPLE HAZARDS/REMARKS SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes V No ** Contains Radioactive Material at concentrations that are not regulated for transportation per 49 CFR but are not All Labs except WSCF: Batch all PNNL samples submitted under A, G, I, S, and W 07 SAFs into one SDG, not to exceed SDG releasable per DOE Order 5400.5 (1990/1993) closure of 14 days. WSCF: Batch all PNNL GW samples submitted into one SDG, daily closure. No/Type Container Sample No. Lab ID Date Time Sample Analysis Preservative B1LCL9 W 1027 1x20-mL P 12-11-06 Activity Scan None W B1LCL9 3x1000-mL G/P SRISO SEP PRECIP GPC: Sr-90 (1) HNO3 to pH <2 B1LCL9 W 1x1000-mL G/P UISO PLATE AEA: List-1 (3) HNO3 to pH <2 B1LCL9 W UTOT KPA: Uranium (1) 1x500-mL G/P HNO3 to pH <2 ULDEIT Date/Time/4/ Received By Relinquished Byanford Date/Time 4 41 Matrix * DAVIL HARBINSON 1 1 2006 F. M. HALL = Soil DS = Drum Solid Received By = Sediment = Drum Liqui Relinquished By Date/Time Date/Time SO = Solid = Tissue = Sludge = Wine = Water = Liouid Date/Time Received By Date/Time = Oil = Vegetation Relinquished By 0 = Air Other Relinquished By Date/Time Received By Date/Time Disposal Method (e.g., Return to customer, per lab procedure, used in process) FINAL SAMPLE Disposed By Date/Time DISPOSITION

PNNIUG	Ĺ	130175
	U	105076
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CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

C.O.C.#

S07-012-341

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Du	e 01.20	5-0	7									Page	<u>1</u> of <u>1</u>	
Collector Fig	uor Hanford					Contact/Requester Dot Stewart				Telephone No. MSIN FAX 509-376-5056				
SAF No. S07-012	Stir Filmin					Sampling (ampling Origin				Purchase Order/Charge Code			
Project Title				**17562FF******		1	anford Site Ice Chest No.					Temp.		
SURV. DECEM Shipped To (Lab)	BER 2006			2.56.2		Method of	4NF-N-3		4035					
Severn Trent Inc	ornorated. Ric	hland				Govt. Ve		Bill of Lading/Ai	F Bill No.					
Protocol SURV							Prio	Offsite Property	No.					
POSSIBLE SAMP ** ** Contains Rac releasable per DOE Or	dioactive Materia	l at con	ncentrations that	are not regulat	ed for transp	ortation per 49	CFR but are not	SPECIAL INSTRUCTIONS All Labs except WSCF: Batch all closure of 14 days. WSCF: Batch all PNNL GW sam	l PNNL samples	s submitted under A,	G, I, S, and W 07	tivity Exempt SAFs into one	ion: Yes V No SDG, not to exceed SDG	
Sample No.	Lab ID	*	Date	Time	No/Type	e Container		Sample A	Analysis				Preservative	
B1LCM0		W	12-11-06	0750	1x20-ml	- P	Activity Scan		THE STATE OF THE S		None			
B1LCM0		W		Ì	3x1000-	mL G/P	SRISO_SEP_PRE	:CIP_GPC: Sr-90 (1)			HNO3 to pH <2			
B1LCM0		W			1x1000-	mL G/P	UISO_PLATE_AE				HNO3 to pH <2			
B1LCM0		W	+	4	1x500-n	nL G/P	UTOT_KPA: Uranium (1) HNO3 to pH <2							
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Relinquished Planto F. M. HALL		Z.			Pate/Date/	Time/414/ 1 2006	Received By DAVE HAAB!	Print Sign		Date/Time /	<u>06</u> s	- Soil	atrix * DS = Drum Solid	
								Date/Time	SO = SI. =	Sediment Solid Sludge Water	DI. = Drum Liaui T = Tissue WI = Wine I. = Liauid			
Relinquished By					Date	Time	Received By Date/Time					Oîl Air	V = Vegetation X = Other	
Relinquished By					Date/	Time	Received By Date/Time							
FINAL SAMPL DISPOSITION		Method	l (e.g., Return to	customer, per	lab procedur	e, used in proc	ess)	Disposed By				Date/T	ine	

PNNL J	6L130. W050	17:	5	;	CHAIN (OF C	CUSTODY/S	SAMPLE ANA	ALYSIS R	REQUEST		O.C.#	$\frac{607-012-3}{\frac{1}{1} \text{ of } \frac{1}{1}}$			
Collector	Fluor Hanford	10 -	/5/1		Cont	tact/Red	uester			Telephone No.	MSIN		AX			
SAF No.	F. M. HALL			***************************************		Dot Stewart 50				509-376-5056 Purchase Order/						
S07-012						lanford S		le l					W.W W			
Proiect Title SURV, DECE	EMBER 2006					Method of Shipment B					Ice Chest No. ROSS Temp.					
Shinned To (La	b)	NAME OF TAXABLE PARTY.			Meti	hod of S	hipment		Bill of Lading/Air Bill No.							
Protocol	Incorporated, Ric	hland				ovt. Veh		Offsite Property	v No.							
** ** Contains	MPLE HAZARI Radioactive Materia COrder 5400.5 (199	al at cor	ncentrations that	are not regulat	ed for transportatio	on per 49 (SPECIAL INSTRUCTI All Labs except WSCF: Ba closure of 14 days. WSCF: Batch all PNNL G	atch all PNNL sample		G, I, S, and W 07 SA		ion: Yes 🛂 N SDG, not to exceed			
Sample No.	Lab ID	*	Date	Time	No/Type Cont	tainer		San	nple Analysis				Preservative			
B1LCK0		W	12-11-06	1	1x20-mL P		Activity Scan	1800-990-990-990-990-990-990-990-990-990-			None					
B1LCK0		W	1		1x1000-mL F	P	906.0_H3_LSC: T	ritium (1)			None					
B1LCK0		W			1x1000-mL (G/P	UISO_PLATE_AE	A: List-1 (3)			HNO3 to pH <2					
B1LCK0		W		47	1x500-mL G	6/P	/P UTOT_KPA: Uranium (1) HNO3 to pH <2									
			7						JLDGI	4						
										- Cara	***************************************					
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Relinquished By Fluor F M I Relinquished By		Z		1000	Date/Time/ PEC 1 1 21 Date/Time	006	Received By OAVID HAA BI Received By		Sign	Date/Time/ EC 1 1 200 Date/Time	S = SE =		DI, = Dr	rum Solid rum Liaui issue		
Relinquished By				eritemblerente me	Date/Time		Received By	No. of the state o		Date/Time	SI. = :	Sludge Water Dil	WI = W $I = I.ie$	ine iouid egetation		
Relinquished By			***************************************		Date/Time		Received By		WHITE ACCOUNTS AND A STATE OF THE ACCOUNTS AND A STATE OF	Date/Time			-			
FINAL SAM DISPOSITI		Method	d (e.g., Return to	customer, per	lab procedure, used	ed in proce	rss)	Dispose	ed By			Date/I	ime			

PIPE SIL

Date/	Time Received:	2.11.06 14:4	<i>[]</i>	
Clien	PEW	SDG #:_ <i>₩&</i>	5076 NA[] SAF	# 807-012 NA]
Work	Order Number:	161130145		807-012-308,341,3
		ROSS	Air Bill # N/A	
1.	Custody Seals	on shipping container inta		VA[] Yes [/ No[]
2.	Custody Seals	dated and signed?		AA[] Yes [] No[]
3.	Chain of Custo	dy record present?	-	Yes [// No []
4.	Cooler tempera	iture:NA 灯	5. Vermiculite/packing ma	iterials is NA
6.	Number of sam	ples in shipping container	, /	,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
7.	Sample holding	g times exceeded?	Ņ	IA [X Yes [] No []
8.	Samples have:			•
	tape custody s	eals.	hazard appropi	labels Hate samples labels
9.	Samples are:	ondillo		
	in good c broken	onargon	teaking have ail	bubbles
10.	Sample pH take			ples requiring head space)
			(<2// pH>2/ pH>	9[]
11.	Sample Locatio *For documents	n, Sample Collector Listed ttion only. No corrective a	1? * action needed.	Yes No[]
12.	Were any anom	alies identified in sample r	eceipt?	Yes[] NOM
13.	Description of a	nomalies (include sample	numbers); <u>N/A</u>	
Sample	Custodian.	S. Smith	Date: 12'11	06 1441
Cli	ent Sample ID	Analysis Requested	Condition	Comments/Action
Client La	formed on	by	Person contacted	
	ection necessary; pr		,	
roject N	Manager		Date	
	9/03 Rev 5			